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# The CHEMIST AND DRUGGIST

SEPTEMBER 3 1955

BRITISH PHARMACEUTICAL  
CONFERENCE NUMBER

✓ X WTN  
1715  
*A Memorable Year*

Francis Edward Stuart  
(The Old Pretender)  
1688-1766

## ABERDEEN

1715 was a memorable year for Aberdeen, for, on September 20th, James Francis Edward Stuart (the Old Pretender) was proclaimed, in Aberdeen, King James the III and VIII. On December 22nd he landed at Peterhead, advanced south to Scone, but on hearing of the approach of the Duke of Argyll he retreated to Montrose and embarked for France.

## LONDON

While the rising in 1715 could hardly be said to achieve even ephemeral success, there opened in that year, in Plough Court in the City of London, a pharmacy which was to succeed through the ages. This was the birth of Allen & Hanburys, now grown into a world wide organisation.



Plough Court  
Pharmacy  
1715

ALLEN & HANBURYS LTD LONDON



## POTTER'S SALES MAKE SALES!

Every tin of  
**POTTER'S PASTILLES**  
 you sell carries  
 inside it full  
 details of these  
 other **Potter's**  
 lines . . .

### POTTER'S ASTHMA REMEDY:

The renowned method of relieving Asthma, Hay Fever or Bronchitis. Simple to use with special Dispenser and directions with each tin.

### POTTER'S ASTHMA CIGARETTES:

Smoked by many asthmatics and bronchial sufferers.

### POTTER'S ASTHMA SMOKING

**MIXTURE:** Very popular amongst users of Potter's Asthma Remedy for gaining relief any time, anywhere.

### ANTEXEMA (LIQUID):

Quick-acting, soothing antiseptic in cases of Eczema, Insect Bites, Acne, Chafed Skin, Pimples and similar minor skin complaints.

### ANTEXEMA GRANULES:

Purify the blood and aid skin recovery. Help prevent skin disorders like Boils, Festers, Skin Abscesses, Whitlows and Poisoned Cuts.

### THOMPSON'S SLIPPERY ELM FOOD:

Potter & Clarke's BIGGEST SELLING LINE. Makes a delicious, nourishing and very digestible food, especially for children and invalids. In 3 varieties: MALTED, UNMALTED and WHOLEMEAL in 1 lb. and 2 lb. tins

### THOMPSON'S DANDELION COFFEE

Recommended for those for whom ordinary coffee (or tea) is inadvisable. Particularly valuable in cases of atonic dyspepsia.

Also Dandelion Coffee Essence.

### CHAMELEON OILS (FOR HUMAN USE):

A dependable liniment for many aches and pains, including Rheumatism, Sciatica, Lumbago, Sprains, etc.

### CHAMELEON OILS (VETERINARY):

The booklet enclosed describes ailments of horses, sheep, cattle and dogs which this liniment successfully treats.

the effect is to create  
 a large **potential**  
**market** for these lines

**POTTER & CLARKE**

LIMITED

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Telephone: RIPPleway 3041

Telegrams: Horehound Phone Barking

Not only do Potter's Catarrh Pastilles and Crystallised Pastilles contain this interesting inter-product leaflet, but so do many of the other Potter's lines listed above. The snowball effect is obvious. In other words **POTTER'S SALES MAKE SALES**. All these lines are available from your usual wholesaler **WHO CAN SUPPLY YOU IMMEDIATELY**.



## INTRAVENOUS TUBERCULOTHERAPY

Intravenous sodium PAS infusion for miliary, meningitic and severe forms of tuberculosis is an established technique; some sanatoria now favour I.V. PAS as *first choice* even in moderate cases because of its very high tolerability.

I.V. infusions demand the use of crystalline sodium PAS of first-grade quality, for which purpose 'AMINACYL' (Wander) brand of specially purified crystalline PAS is supplied to sanatoria in bottles of 250 grammes.

**The Wander range of tuberculostatics  
also includes the following oral forms:**

### **B-PAS** **WANDER**

Calcium B-PAS (Wander) provides the advantages of reliable blood levels, and very high acceptability because it is practically tasteless.

**PACKS**—Powder: Tins of 150 and 500 x 3.5 g. envelopes  
Cachets: Tins of 80 and 400 x 1.0 g.

### **'B-PASINAH'** **WANDER**

For concurrent therapy, 'B-PASINAH' provides 1 g. B-PAS and 25 mg. INAH in convenient Cachet form, packed in tins of 100 and 500.

*Price details of all forms of PAS from the Medical Dept.*

**A. WANDER LTD., 42 Upper Grosvenor St., London, W.1**



T.41



Now  
that  
soluble  
aspirin  
is  
preferred...



AS YOU KNOW, soluble aspirin is now very frequently prescribed in preference to ordinary aspirin. Solprin provides soluble aspirin of high quality and great stability.

Solprin dissolves rapidly in water to form a solution of calcium aspirin that is substantially neutral. It has proved rapid and reliable in its analgesic effect, and is

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Solprin is now packed in units of 10 tablets (in foil), 50 units to the pack. The N.H.S. basic price for this pack is 12/6. It is available only on prescription and only in Great Britain and Northern Ireland.

# **SOLPRIN** REGD.

Stable, soluble aspirin

RECKITT & COLMAN LTD., HULL & LONDON (PHARMACEUTICAL DEPT., HULL)



## ... but the human CAN'T hibernate

No winter respite for the human kind... no carefully garnered nourishment. How important it is, then, to pay *special* attention to adequate intake of nutritional factors during the rigorous months ahead...

### Vi-Magna\* MULTIVITAMINS

Individuals who feel "out of sorts" often benefit from a course of Vi-Magna Capsules. In such cases, one capsule a day does much to improve appetite and general well-being.

Each capsule contains: Vitamin A, 5000 I.U.; Vitamin D, 500 I.U.; Thiamine HCl (B<sub>1</sub>), 3.0 mg.; Riboflavine (B<sub>2</sub>), 3.0 mg.; Pyridoxine HCl (B<sub>6</sub>), 0.2 mg.; Ascorbic Acid (C), 75.0 mg.; Niacinamide, 20.0 mg.; Calcium Pantothenate, 1.0 mg.; FOLVITE\* Folic Acid, 1.0 mg.; Vitamin B<sub>12</sub>, 1 microgram. *Bottles of 100 and 1,000.*

### Gevral\* GERIATRIC VITAMIN MINERAL SUPPLEMENT

A truly valuable combination of vitamins and minerals, for those past middle life.

Each capsule contains: Vitamin A, 5000 I.U.; Vitamin D, 500 I.U.; Vitamin B<sub>12</sub>, 1 microgram; Thiamine Hydrochloride (B<sub>1</sub>), 5 mg.; Riboflavine (B<sub>2</sub>), 5 mg.; Niacinamide 15 mg.; Folic Acid, 1 mg.; Pyridoxine Hydrochloride (B<sub>6</sub>), 0.5 mg.; Calcium Pantothenate, 5 mg.; Choline Dihydrogen Citrate, 100 mg.; Inositol, 50 mg.; Ascorbic Acid (C), 50 mg.; Vitamin E, 10 units; Rutin, 25 mg.; Iron (as Fe SO<sub>4</sub>), 10 mg.; Iodine (as KI), 0.5 mg.; Calcium (as CaHPO<sub>4</sub>), 145 mg.; Phosphorus (as CaHPO<sub>4</sub>), 110 mg.; Boron (as Na<sub>2</sub>B<sub>4</sub>O<sub>7</sub> · 10H<sub>2</sub>O), 0.1 mg.; Copper (as CuO), 1 mg.; Fluorine (as CaF<sub>2</sub>), 0.1 mg.; Manganese (as MnO<sub>2</sub>), 1 mg.; Magnesium (as MgO), 1 mg.; Potassium (as K<sub>2</sub>SO<sub>4</sub>), 5 mg.; Zinc (as ZnO), 0.5 mg. *Bottles of 30.*

### Lederplex\* VITAMIN B COMPLEX LIQUID

Contains the entire B complex from liver—plus other important nutritional factors. It does much to ensure normal cell life and growth, and promotes resistance to infection. Lederplex is also issued in Capsules and Tablets.

Each teaspoonful of Lederplex Liquid contains: Thiamine HCl, 2.0 mg.; Riboflavine, 2.0 mg.; Niacinamide, 10.0 mg.; Pyridoxine, 0.2 mg.; Pantothenic Acid, 2.0 mg.; Choline, 20.0 mg.; Inositol, 10.0 mg.; FOLVITE\* Folic Acid, 0.2 mg.; Soluble Liver Fraction, 470.0 mg.; Vitamin B<sub>12</sub>, 5 micrograms. *Bottles of 4, 8 and 12 fl. oz.*



LEDERLE LABORATORIES DIVISION

Cyanamid Products Ltd.

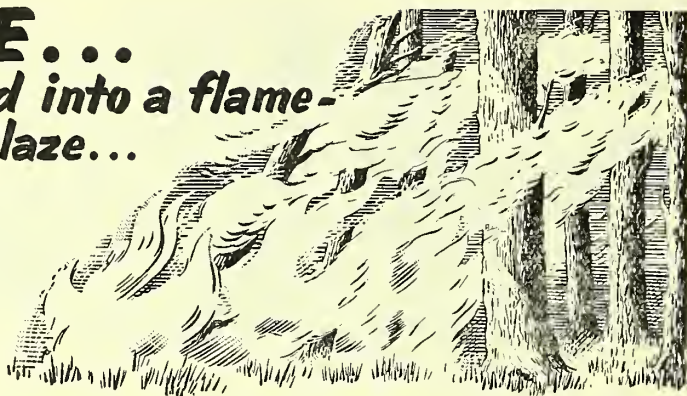
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\* Regd. Trade-Mark

**LIKE A FIRE...**  
*just a spark-fanned into a flame-  
 developing into a blaze...*

A simile of the rapid growth of  
 Diuromil Sales.

Every week thousands of sparks—our advertisements in our Nation-wide press campaign, create interest and customers. Slides on Theatre screens all over the country stimulate interest, plus medical support and the endless testimony of one person who has derived benefit telling others, until the sparks become flames, which have now developed into a blaze.



# Diuromil

has the largest and fastest sales of all effervescent salts, especially compounded for the relief of

**RHEUMATISM, GOUT, LUMBAGO, SCIATICA, FIBROSITIS**

You can add fuel to the flames by displaying Diuromil—  
 very attractive show material gladly sent on request.



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**PATA**

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## INDEX TO ADVERTISERS

Acme Vacuum Flask Co., Ltd. ....	62	British & Colonial Druggist, Ltd. ....	70
Addis, Ltd. ....	103	British Drug Houses, Ltd., The ....	5
A.G.S. & Petronic, Ltd. ....	95	British Dyewood Co., Ltd., The ....	10
Allen & Hanburys, Ltd. ....	Front Cover	Britton, Malcolm & Co., Ltd. ....	109
Allen Chlorophyll Co., Ltd., The ....	57	Brook, Parker & Co., Ltd. ....	86
Amalgamated Business Machines, Ltd. ....	34	Burgoyne Burbidges & Co., Ltd. ....	59
Arcfield Optical Manufacturing Co., Ltd. ....	35	Burrough, James, Ltd. ....	Leader Page
Arenco, Ltd. ....	100	Burroughs Wellcome & Co. ....	71
Askit, Ltd. ....	82		
Ayrton, Saunders & Co., Ltd. ....	14	Calmic, Ltd. ....	92
		Caplin, J. L., Ltd. ....	92
Bailey, Robert & Son, Ltd. ....	104	Carnegies of Welwyn, Ltd. ....	6
Banister Street Works, Ltd., The ....	108	Cellucotton Products, Ltd. ....	50, 51
Barker, Robert, & Son, Ltd. ....	80	Chemist and Druggist Poisons Guide ....	112
Beatson, Clark & Co., Ltd. ....	90	Chemist and Druggist Veterinary Handbook ....	107
Bencard, C. L., Ltd. ....	Interleaved Edit., 271	Ciba Laboratories, Ltd. ....	21
Bengue & Co., Ltd. ....	111	Compressed Paper Packing, Ltd. ....	97
Benton, T. L., & Co., Ltd. ....	105	Cox, Arthur H. & Co., Ltd. ....	Cover iv
Betts & Co., Ltd. ....	94	Cresswell Bros. Sponges ....	20
Bioglan Laboratories, Ltd., The ....	36	Crookes Laboratories, Ltd., The ....	45
Biorex Laboratories, Ltd. ....	102	Culmak, Ltd. ....	Leader Page
Boots Pure Drug Co., Ltd. ....	35	Cussons, Sons & Co., Ltd. ....	Cover iii
Borax Consolidated, Ltd. ....	89	Cuticura Preparations ....	76
Box, W. H. ....	78		

(Continued on page 6)

**Vital points about Entacyl, the new versatile anthelmintic**

1. Effective against threadworms and roundworms which it eradicates rapidly without harm to the patient.
2. Administration is not associated with nausea or side effects even in very young children.
3. Complete eradication is obtained without an enema.

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TRADE MARK

TABLETS OF PIPERAZINE ADIPATE 300 mg. (BRIT. PAT. APPN. NO. 29123/55)				SUSPENSION 300 mg. PIPERAZINE ADIPATE in each half-teaspoonful	
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"	500 "	"	42/-	"	63/-
				Bottle of 8 fl. oz. (225 ml.)	TRADE 12/- RETAIL 18/-

**INDEX (cont.)**

Daniel, Richard, & Son, Ltd. ....	13	Goodman, George, Ltd. ....	18
Davenport, J. T., Ltd. ....	113	Graesser Salicylates, Ltd. ....	72
Davidson, William, Ltd. ....	10	Graesser-Thomas, H. W., Ltd. ....	110
Distillers Co. (Biochemicals), Ltd., The ....	33	Guest, Thos., & Co., Ltd. ....	34
Dixor, Ltd. ....	84		
Duncan, Flockhart & Co., Ltd. ....	75	Harker Stagg, Ltd. ....	32
Dunn Bros., Succrs., Ltd. ....	108	Harley, Thos., Ltd. ....	108
		Harris, Hart & Co., Ltd. ....	90
Eastern Counties Preserves (1940), Ltd. ....	7	Harrison, Alf., & Sons, Ltd. ....	4
Edme, Ltd. ....	78	Hartleys (Castleford), Ltd. ....	106
English Grains Co., Ltd., The ....	106	Haynor, Ltd. ....	82
Erica Products, Ltd. ....	42	H. D. G. (Pharmaceuticals), Ltd. ....	4
Eucryl, Ltd. ....	61	Heath & Heather, Ltd. ....	42
Evans, Adlard & Co., Ltd. ....	94	Heath, Hicks & Perken (Thermometers), Ltd. ....	98
Evans, Gadd & Co., Ltd. ....	72	Heinz, H. J., & Co., Ltd. ....	48
		Herbert & Sons, Ltd. ....	98
F.A.I.R. Laboratories, Ltd. ....	83	Hygienic Drinking Straws Co., Ltd. ....	10
Feedrite, Ltd. ....	22		
Ferguzade, Ltd. ....	10	Illingworth, E., & Co. (Bradford), Ltd. ....	69
Foyle, W. & G., Ltd. ....	80	Imperial Chemical (Pharmaceuticals), Ltd. ....	41
Franco-British Glass Co., Ltd., The ....	98	Industrial Appliances, Ltd. ....	53
Freeman, William, & Co., Ltd. ....	66, 67	International Bottle Co., Ltd., The ....	56
		Inverni & Della Beffa, S.p.A. ....	102
Galloway, P. H., Ltd. ....	83	Isopad, Ltd. ....	64
Geigy Pharmaceutical Co., Ltd. ....	37	Ivers-Lee (Great Britain), Ltd. ....	30
Glover, Thos., & Son, Ltd. ....	Leader Page		
Golden, Ltd. ....	79		

*(Continued on page 8)**From the Carnegie Range of Fine Chemicals***DL METHIONINE****CARNEGIES OF WELWYN LTD**

Telegrams : 'CARNEGIES, WELWYN GARDEN CITY'

Telephone : WELWYN GARDEN 5001

(6 lines)

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PHARMACISTS WHO HAVE taken advantage of Lockwoods bonus offer have not been disappointed. For these Vitamin 'C' Fruit Juice Drinks have taken the public's fancy. No wonder! They're packed with Natural Vitamin 'C'—the extra Vitamin 'C' everybody needs. They taste like real fruit juices—because they're made from real fruit juices. And those fruit juices are *different*! Raspberry! Orange! Pineapple! That's why the public is already buying Lockwoods—fast.

**NEW!** All the Vitamin 'C' you need—



in real fruit-juice drinks you'll love!

ENJOY HEALTH-GIVING VITAMIN 'C' IN

**LOCKWOODS**  
CONCENTRATED  
NATURAL JUICE HEALTH DRINKS

3/3

## Striking advertisements will step up demand

A half-page in the Daily Express (September 7th) spearheads Lockwoods campaign—which will appear in newspapers and magazines with a readership of 37 million. This powerful publicity will create a big demand for Lockwoods—make sure you get your share of the profits!

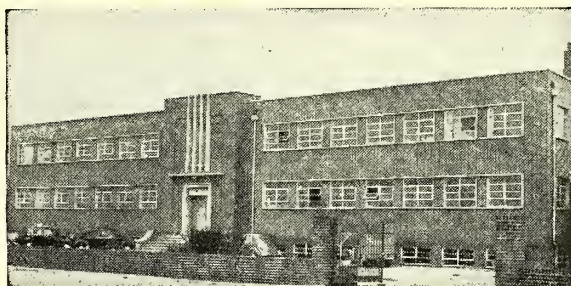


## Generous terms

Lockwoods discount gives the Pharmacist a profit of no less than 11d on each bottle, on orders of 12 dozen bottles (slightly less on smaller orders).

## Stock up now!

Write today—address below—for your stocks of this new money-spinner. A gay, bright show card is sent to you with your order. Display it on your counter—and sell more Lockwoods!



# LOCKWOODS

VITAMIN 'C'  
CONCENTRATED NATURAL JUICE HEALTH DRINKS

Manufactured by  
EASTERN COUNTIES PRESERVES (1940) LTD., LONG SUTTON, Lincs.

All orders and enquiries to Sole distributors:  
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86 CLERKENWELL ROAD, LONDON, E.C.1 TEL: CLE. 2336

## INDEX (cont.)

Jay Glamour Products, Ltd. ....	Classified Section	Ransom, William & Son, Ltd. ....	49
Jeffreys, Miller & Co., Ltd. ....	74	Rapidol, Ltd. ....	52
Jeyes' Sanitary Compounds Co., Ltd. ....	110	Raywarp Textiles, Ltd. ....	87
Jodez (Manchester), Ltd. ....	106	Reed, Kenneth, & Co., Ltd. ....	100
Jones, Samuel, & Co., Ltd. ....	104	Regna Cash Register Co., The ....	31
		Rentokil, Ltd. ....	106
		Ribbands, C. & Sons ....	Classified Section
Kearsley, C. & G., Ltd. ....	74	Riddell Products, Ltd. ....	73
Kellys, John (London), Ltd. ....	104	Riley, John, & Sons, Ltd. ....	90
Kennett Price Markers ....	96	Roberts Windsor Soap Co., Ltd. ...	Interleaved Edit., 272
Kirby, H. & T., & Co., Ltd. ....	17	Robinson & Sons, Ltd. ....	91
		Ronaldson, John & Co., Ltd. ....	54
Lastonet Products, Ltd. ....	82	Rosedale Products, Ltd. ....	44
Lederle Laboratories Division ....	3		
LeMur, Ltd. ....	114	Sallis, E., Ltd. ....	52
Lilly, Eli, & Co., Ltd. ....	36, 40	Shadeine Co., Ltd., The ....	75
Lofthouse & Saltmer, Ltd. ....	62	Scholl Manufacturing Co., Ltd., The ....	16
London Commercial Electrical Stores, Ltd., The ...	84	Schutze, F., & Co., Ltd. ....	90
Luft-Tangee (London) Ltd. ....	26	Simon, May, & Co., Ltd. ....	80
		Simpson's Manufacturing Pty., Ltd. ....	72
Macdonald & Son, Ltd. ....	108	Skuse & Co., Ltd. ....	Leader Page
Macfarlan, J. F., & Co., Ltd. ....	19	Smith & Hill (Chemists), Ltd. ....	76
Matthews & Wilson, Ltd. ....	88	Smith, T. & H., Ltd. ....	24, 25
Maw, S., Son & Sons, Ltd. ....	102	Societa per Azioni Industrie Agricole Meridionali	74
Mawson & Proctor Pharmaceuticals, Ltd. ....	85	Solco, Ltd. ....	74
Meggeson & Co., Ltd. ....	55	'Solprin' ....	2
Menley & James, Ltd. ....	68	Souplex, Ltd. ....	92
Metal Box Co., Ltd., The ....	65	Spa Brushes, Ltd. ....	12
Mining & Chemical Products, Ltd. ....	58	Stafford-Miller, Ltd. ....	64
Mitchell, L. A., Ltd. ....	99	Standard Synthetics, Ltd. ....	78
Monsanto Chemicals, Ltd. ....	27	Surgical Hosiery Co., Ltd. ....	74
Moore Medicinal Products, Ltd. ....	11	Suttley & Silverlock ....	93
Morgan Fairest, Ltd. ....	101		
'Myers of Old Street' ....	Classified Section	Taylowe, Ltd. ....	63
Myers, S. I. ....	Classified Section	Thermos (1925), Ltd. ....	88
		Thomson, R. ....	10
Napp, H. R., Ltd. ....	60	Thornton, F. J., & Co., Ltd. ....	94
Nestle Co., Ltd., The ....	38, 39		
Nurse Sykes Co. ....	110	Ultra-Violet, Ltd. ....	88
		Universal Metal Products, Ltd. ....	47
Oliver's, William (Rubbers), Ltd. ....	113		
Olley, C., & Sons, Ltd. ....	100	Vernon & Co., Ltd. ....	76
Orridge & Co. ....	Classified Section	Vitamins, Ltd. ....	81
Oxo, Ltd. ....	86		
Parke, Davis & Co., Ltd. ....	9	Wander, A., Ltd. ....	1
Paterson, William, & Sons (Aberdeen), Ltd. ....	13	Warm-Glow Co., Ltd., The ....	46
Pharmax, Ltd. ....	4	Warrick Bros., Ltd. ....	15
Philips Electrical, Ltd. ....	43	Webster, Isaac, & Sons, Ltd. ....	96
Pierson, Morrell & Co., Ltd. ....	73	Weil, Joseph, & Son, Ltd. ....	105
Pinkerton, Gibson & Co., Ltd. ....	10	West Pharmaceutical Co. ....	23
Pond's Extract Co., Ltd. ....	48	Westcott & Co., Ltd. ....	34
Potter & Clarke, Ltd. ....	Cover ii	Whiffen & Sons, Ltd. ....	28
Proprietary Articles Trade Association, The ....	40	Whiteways Cyder Co., Ltd. ....	34
Pure Lemon Juice Co., Ltd. ....	80	Wilcox, Jozeau & Co., Ltd. ....	Leader Page
		Wilkinson, S. W., & Co., Ltd. ....	96
"Radio Times" ....	77	Wilson & Mansfield, Ltd. ....	94
Rankin Bros., & Sons ....	Leader Page	Woodward, G. O., & Co., Ltd. ....	29
		Wright, Layman & Umney, Ltd. ....	70
		Zeal, G. H., Ltd. ....	32



*Extend the traditional toast of Bon-Accord  
to all conference delegates to Aberdeen—  
'Happy to Meet. Sorry to part.  
Happy to Meet Again.'*

Dear Chemist Friends,

Since the foundation of this firm—the only one of its kind in the North of Scotland—it has been our constant endeavour to offer to Pharmacists throughout the world products in which they can have complete confidence.

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Cordially yours,

T. SCOTT SUTHERLAND  
Managing Director.

**MOORE MEDICINAL PRODUCTS LTD.**

1 Queen's Terrace, Aberdeen.

64 Gloucester Place, London, W.1.

# The best selling Toothbrush idea for years

## The *Spa* Children's Toothbrush Range

**BRUSHES FOR BABIES,  
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ON A SELLING DISPLAY**



The so-called 'toothbrush selling' season is over. But it is not over for the Spa Children's Toothbrush Range. This new idea has caught on so well that chemists everywhere are ordering in large quantities.

Don't miss this big chance for an extra Autumn/Winter sale that you did not expect. There is a bigger turnover in children's toothbrushes than ever before.

**TAKE ADVANTAGE OF THE GENEROUS SPA OFFER  
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**3 DOZEN  
*Spa***

**CHILDREN'S BRUSHES**

*(complete with FREE Show-card and three Display Brushes) COST YOU*

**24/-**

**YOU WILL SELL THESE FOR**

**36/-**

Send for more details now to: Child Dental Hygiene Promotion

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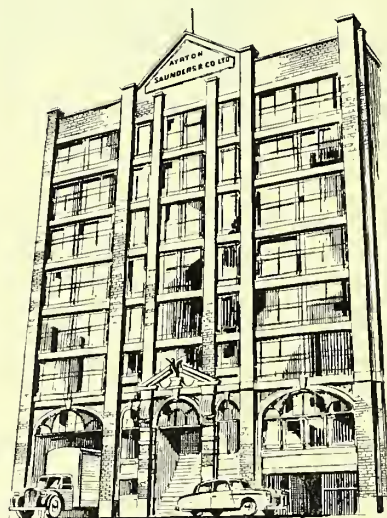
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LIVERPOOL

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Burn Cream  
Cremosan Ointment  
"Dispello" Catarrh Snuff  
"Halaurant" Halibut Liver Oil  
with Orange Juice  
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Iodised Throat Tablets  
"Naze" Brand Ephedrine nasal drops  
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"P.K.L." Pain-killing liniment  
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"Tinoxid" Tablets  
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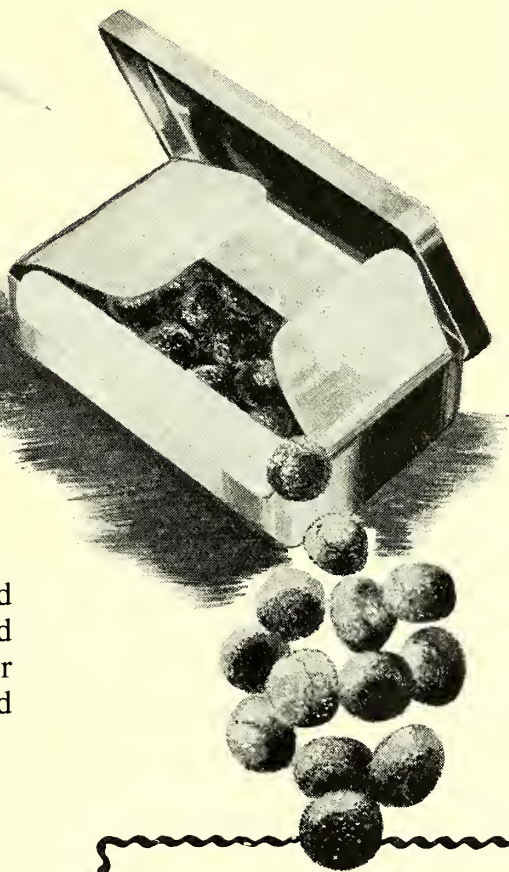
Quick delivery from stock.  
Choice of 3 attractive 'own name' labels.

## SELL OUR PASTILLES WITH YOUR NAME AND ADDRESS

For full details and samples of  
our range write to:

**WARRICK BROTHERS LTD.**

4-10 NILE STREET, LONDON, N.1.



### A FEW OF OUR PACKED LINES.

#### PASTILLES.

Glycerine, Lemon and Honey.  
Glycerine and Blackcurrant.  
Cherry Cough.  
Glycerine and Thymol.  
Smokers' Cough.  
Child's Own cough.

*Linseed, Liquorice and Chlorodyne lozenges, Peppermint lozenges (curiously strong).*

# NOW! A 3-POINT SALES DRIVE FOR *Scholl* SURGICAL HOSIERY

## Get your share of new business

News from *Scholl* this month is a concentrated 3-point sales drive for surgical hosiery. National and provincial advertising will be telling the Dr. Scholl hosiery story to the nation. Smart displays for your shop and window will prove that Scholl Surgical Hosiery is as cosmetically attractive as it is scientifically effective. And the new "Guide to prescribing" for doctors will help to solve the problems of correct description. There's new business to be won in the field of Surgical Hosiery. Be prepared to get your share.

### 1 NATIONAL AND PROVINCIAL ADVERTISING

In order to guarantee the success of this special advertising drive Scholl have booked large spaces in over 100 leading provincial newspapers, and in all three London Evening papers. To support this vast advertising programme, Scholl Surgical Hosiery will be featured in all Scholl National Advertising over the next two months.

### 2 FRESH EYE-CATCHING DISPLAYS

To help you tie in with Scholl advertising, a wide range of showcards and display pieces for Surgical Hosiery will be available to you on request. The public will be looking for Scholl Surgical Hosiery. Make sure they come to you. Ask your Scholl representative to give you full details.

### 3 GUIDE TO PRESCRIBING SCHOLL SURGICAL HOSIERY

Many of your customers will be obtaining Scholl Surgical Hosiery on E.C.10's. This "Guide to Prescribing Surgical Hosiery" is to be mailed to Doctors, and we will gladly send you a copy free of charge. Just write to the address below.



THE SCHOLL MFG. CO. LTD., 182/204 ST. JOHN STREET, LONDON, E.C.1

The outstanding name

**KIRBY**  
**OF LONDON**

for...

# TABLETS

*also*

PILLS • CAPSULES • PESSARIES • SUPPOSITORIES  
PENICILLIN PRODUCTS • OINTMENTS FOR THE EYE  
SOFT GLYCERINE LOZENGES • STERILE PRODUCTS  
PACKED PHARMACEUTICALS

Own materials processed  
•  
Special Formulæ prepared  
•  
Home and Export enquiries  
invited

Price list on application to:

**H. & T. KIRBY  
& CO., LTD.**

Manufacturing Chemists

**WILLESDEN GREEN, LONDON, N.W.2**

Phone: Willesden 1146 Telegrams: Kirbilim, Norphone, London  
Code: Bentleys (2nd)

Established 1866



# Handipaks

## A PROVED SUCCESS

**EYE LEVEL  
HAIRGRIP DISPLAY  
2 doz. HANDIPAKS**



**LIFE SIZE**



**HP 3  
33 EVE HAIRGRIPS  
41/- Gross Boxes  
(Plus Purchase Tax 25%)  
RETAIL 6d.**

★ **INSTANT APPEAL**

Eases work for Retailers

★ **SELF SERVICE**

A fast moving line

★ **BIG VALUE**

More Hairgrips than on cards for 6d.

★ **CONVENIENCE**

Tidy handbag pack and ideal number of Hairgrips for home perm. re-set.

**HANDIPAKS MAY BE OBTAINED FROM YOUR USUAL WHOLESALER**

SHOULD THERE BE ANY DIFFICULTY IN OBTAINING SUPPLIES  
PLEASE ADVISE THE MANUFACTURERS

**GEORGE GOODMAN LTD., ROBIN HOOD LANE, BIRMINGHAM 28**

# J. F. MACFARLAN & CO LTD

*Established 1780*

## 175 *Years of Progress*

*Like many other world-famous firms of manufacturing and wholesale chemists J. F. Macfarlan & Co., Ltd. had its origin in a pharmacy of the old school where medicinal preparations were actually made.*

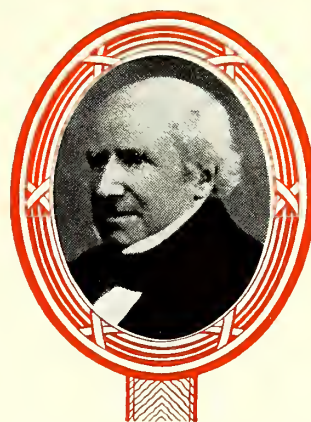
*By the firm pure Morphine Salts were first manufactured in this country. By it, too, Codeine was first made in a pure state and later the other important alkaloids and derivatives of Opium, the latest being Pholcodine.*

*The firm was also early in the field of anæsthetic manufacture with Chloroform and Ether. Later Ethyl Chloride and Neothyl (Brand of methyl-n-propyl ether) have been added to their range of anæsthetic agents.*

*Other products of J. F. Macfarlan include various alkaloids, medicinal resins, surgical ligatures and sutures and the usual range of galenicals.*

*All their products are of the highest quality and their service meets the demands of the most exacting.*

8, Elstree Way,  
BOREHAM WOOD,  
HERTFORDSHIRE.



JOHN FLETCHER MACFARLAN  
*from whom the Company takes its name*



DAVID RENNIE BROWN  
*who first manufactured Pure Morphine  
in this country*

Abbeyhill Chemical Works,  
EDINBURGH.



**Requested  
everywhere  
- naturally**

**MORE AND MORE PEOPLE ARE REALISING  
THAT NO SUBSTITUTE CAN EQUAL THE QUALITIES  
OF A **NATURAL** DEEP SEA SPONGE**

**N**ATURAL deep sea sponges are softer, kinder to the skin, more hygienic and hold three times more water than any substitute. More and more of your customers are realising this every day. That is why to display natural sponges is to **SELL THEM!**

CRESSWELL'S have been in the Sponge Trade for more than 150 years, and as the largest bulk buyers of Natural Sea Sponges Cresswell's get **THE BEST WHEN THE SPONGE CROP IS FISHED.**

Varied assortments of popular priced **RELIANCE** Honeycomb and Fine Turkey Sponges are now available. Sponges are transparent wrapped if required. Please write for price lists and details—or for our Representative to call.

**National Pharmacy Exhibition**

September 19 - 22

**STAND No. 20 B**



**CRESSWELL BROS. SPONGES**

*(World Natural Sponge Suppliers Ltd.)*

**Largest Processors and Stockists of Natural Sea Sponges in the World**

**Reliance House, Copper Mill Lane,  
Plough Lane, Tooting, London, S.W.17.**

Telephone: WIMbledon 8686/7

Telegrams: Sponge, London, S.W.17.

# Bradosol

## LOZENGES

*each containing 0.5 mg. Bradosol ( $\beta$ -phenoxy-ethyl-dimethyl-dodecyl ammonium bromide)*

**Promptly Relieve**

**Sore Throats**

EFFECTIVE AGAINST

A WIDE RANGE

OF BACTERIAL AND

FUNGAL INFECTIONS

OF MOUTH

AND THROAT

*Tubes of 20 lozenges (2/6)*

*Subject to the usual discounts.*

*Exempt purchase tax*

C I B A

*'Bradosol' is a registered trade mark. Reg. num.*

CIBA LABORATORIES LIMITED, HORSHAM, SUSSEX TEL: HORSHAM 1234 GRAMS CIBALABS, HORSHAM



The nearest  
approach to  
natural feeding  
**FEEDRITE**



are you  
taking advantage  
of our  
**NATIONAL  
ADVERTISING**  
read by  
**69,000,000**  
people ?

Daily Mirror, Daily Herald,  
Daily Sketch, People, News  
of the World, Sunday  
Pictorial, Parents, Mother,  
Nursery World, etc.

Consistent National advertising of Feedrite, approval of the Medical and Nursing profession and the demand by mothers everywhere, has made these products a ready seller wherever Feeding Bottles and Teats are sold.

**FEEDRITE BOTTLE AND TEAT.**

**FEEDRITE SPARE BOTTLES.**

**FEEDRITE SPARE THERMAL HEAT RETAINING PAD SETS**

**FEEDRITE ANTI-COLIC TEATS Cherry or Straight.**

**FEEDRITE RUBBER BOTTLE STOPPERS.**

**FEEDRITE FOOD AND BATH THERMOMETERS.**

*(Individually Packed with Showcard ready for Display.)*

OBTAINABLE ONLY FROM  
YOUR WHOLESALER

**MAKE SURE YOUR STOCKS  
ARE SUFFICIENT TO MEET THE INCREASING DEMAND**

Showcards and Leaflets supplied  
on request.

**FEEDRITE LTD.** 300 KINGSTON ROAD, MERTON PARK, SURREY

# Cremalgin

(Rubefacient Balm) \*

Over 100,000 prescriptions for rubefacient balms  
are written monthly.

More than 9,000 practitioners have requested and  
received samples of Cremalgin.

The demand grows — daily

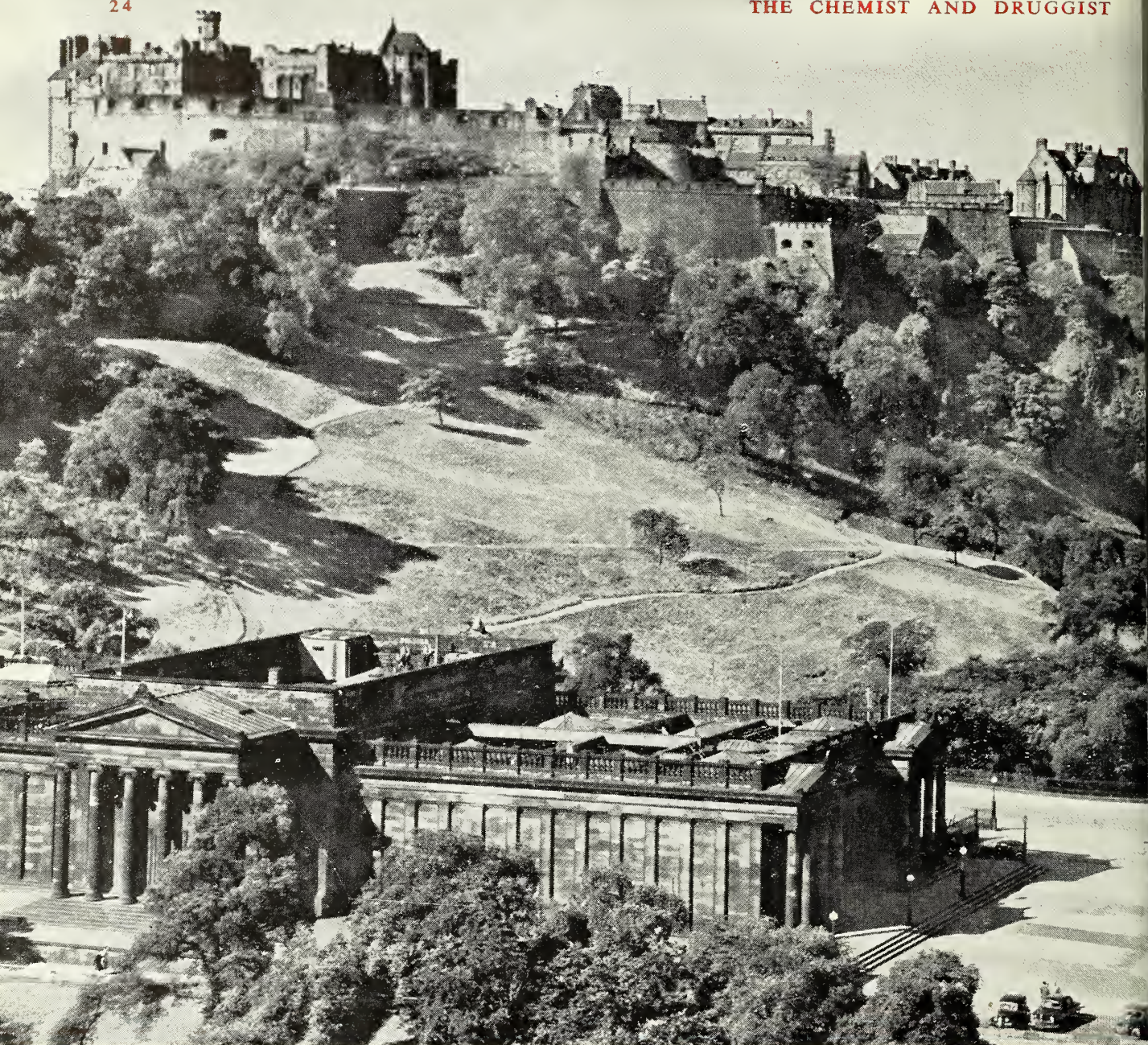
\*Methyl Nicotinate 1.0%  
Glycol Salicylate 10.0%  
Histamine Dihydrochloride 0.1%  
Capsicin 0.1%  
Excipient q.s.

Packed in 1 oz. dispensing tubes at 21/-  
per doz. and in 1 lb. dispensing jars  
at 19/6 per unit. Plus 25% P.T.

WEST PHARMACEUTICAL COMPANY

Wood Lane, London, W.12.

Telephone: SHEpherds Bush 6262



## MANUFACTURERS OF FINE CHEMICALS

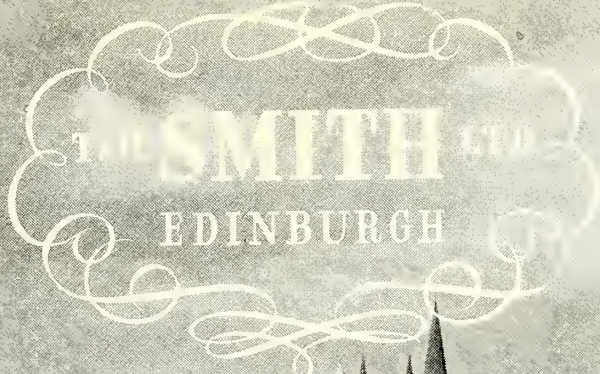
Aloin  
 Apiol  
 Apomorphine Hydrochloride  
 Atropine & Salts  
 Brucine & Salts  
 Caffeine & Salts  
 Camphor Monobromide  
 Chloroform  
 Codeine Alkaloid  
 Codeine Hydrochloride

Codeine Phosphate  
 Codeine Sulphate  
 Diamorphine & Salts  
 Dihydromorphine Hydrochloride  
 Ergot Preparations  
 Eserine & Salts  
 Ether  
 Ethyl Chloride (General & Local)  
 Ethylmorphine & Salts  
 Extract of Cascara Sagrada, Dry

Extract of Cascara Sagrada, Liquid  
 Extract of Male Fern  
 Extract of Opium, Dry  
 Extract of Opium, Liquid  
 Hecogenin Acetate  
 Homatropine & Salts  
 Hydrocodone Bitartrate  
 Hydrocodone Hydrochloride  
 Hyoscine & Salts  
 Hyoscyamine & Salts

Wholesalers of Ethical Specialties

BLANDFIELD CHEMICAL WORKS - EDINBURGH 11



## AND PHARMACEUTICAL PREPARATIONS

Iron & Ammonium Citrate  
 Galap Resin (Powder & Lump)  
 Khellin  
 Magnesium Trisilicate  
 Morphine Alkaloid  
 Morphine Acetate  
 Morphine Hydrochloride  
 Morphine Sulphate  
 Morphine Tartrate  
 Nalorphine Hydrobromide

Oleoresin Capsicum  
 Oleoresin Ginger  
 Opium Powder 10%  
 Ox Bile Concentrate  
 Oxycodone Hydrochloride  
 Papaveretum  
 Papaverine & Salts  
 Pethidine Hydrochloride  
 Pholcodine & Salts  
 Picrotoxin

Pilocarpine & Salts  
 Podophyllin Resin (Emodi)  
 Potassium Citrate  
 Salicin  
 Santonin  
 Scammony Resin (Powder & Lump)  
 Sodium Citrate  
 Sodium Tauroglycocholate  
 Strychnine & Salts  
 Theobromine & Salts

Proprietaries and Sundries

32 VIRGINIA STREET - GLASGOW C.I

# Three new sales winners

by *Tangee*

## **BRIGHT 'N CLEAR**

### ***New True Tangee Shade!***

A new, true brilliant red that stays vivid and vibrant even after blotting! Another sales winner for your TANGEE display!

Millions of ads carry the good news about BRIGHT 'N CLEAR to every one of your customers. Big colour-ad campaign in *Woman*, *Good Housekeeping*, *Vanity Fair*, *Woman and Beauty*, *True Story*, *True Romances*.



## **STANDARD SWIVEL**

### ***New Luxury Lipstick for 5/-***

Delicately chased, gold-gliting metal: genuine swivel action; new filler shape for easy, accurate use. In all nine Tangee shades: Natural, Theatrical Red, Red Red, Medium Red, Gay Red, Cherry Pink, Rhapsody in Pink, Pink Queen, Bright 'n Clear.

STANDARD SWIVEL's another natural seller for the Tangee range—joins the De Luxe (6/9) and the fast moving Medium (2/3)

## ***New. Sealed Refill Pack!***

Polystyrene, the costly plastic packaging medium—now used to keep *all* Tangee refills factory-pure and fresh. The hand that opens them is the first to touch them!

*De Luxe* refill 3/3 • *Standard Swivel* Refill 2/9

**LUFT-TANGEE (LONDON) LTD**  
**329 HIGH HOLBORN WCI**

DISTRIBUTORS IN GREAT BRITAIN  
**J. C. GAMBLES & CO LTD**  
209/215 Blackfriars Road, SE1 • WAT 5922/8



**IN THE SERVICE OF YOUR INDUSTRY**

... with a range of products including ...

**P.C.M.C.      P.C.M.X.**  
**Cresantol\*-15      Cresantol\*-3**

*(\*Registered Trade Marks)*

Write for full details to:

**MONSANTO CHEMICALS LIMITED**

**242 Victoria Station House, Victoria Street, London, S.W. 1**  
**and at Royal Exchange, Manchester, 2.**

In association with: Monsanto Chemicals Company, St. Louis, U.S.A. Monsanto Canada Limited, Montreal. Monsanto Chemicals (Australia) Ltd., Melbourne. Monsanto Chemicals of India Ltd., Bombay. Representatives in the world's principal cities.



Regd.

ALLANTOIN  
ALMOND OIL  
AMINOPHYLINE  
BROMIDES · CAFFEINE  
CLOVE OIL · EMETINE  
IODINE RESUB · IODIDES  
LITHIUM SALTS  
THEOBROMINE

*...all readily available from*

**WHIFFENS**

*Industrial and Pharmaceutical  
Chemical Division of Fisons Ltd.*



**SUPPLIERS OF FINE CHEMICALS  
FOR MORE THAN 100 YEARS**

WHIFFEN & SONS LTD., DEPT. Z/GP.2A, NORTH WEST HOUSE, MARYLEBONE ROAD, LONDON, N.W.1  
TELEPHONE: PADDINGTON 1041/9      TELEGRAMS: WHIFFEN, NORWEST, LONDON

*If it's Tablets...*

# WOODWARD

Specialists in  
the preparation of  
tablets to customers'  
own Formulæ.

## COMPRESSED MEDICINAL TABLETS

- QUALITY AND ACCURACY GUARANTEED
- MODERN PLANT
- PROMPT DELIVERY

HOME and EXPORT ENQUIRIES INVITED

### G. O. WOODWARD & CO., LTD.

MANUFACTURING CHEMISTS

LARKHALL WORKS, MORRISH ROAD, BRIXTON HILL, LONDON, S.W.2

Telephone: TULSE HILL 9481-2-3



**UNIT PACKAGING**

**IVERS-LEE**  
**PACKAGING SERVICE**



# TAKE A REGNA CASH REGISTER for TIME-SAVING ACCURACY



Because automatically—

it records all transactions,

it analyses every item by operator or commodity,

it provides a printed receipt for the customer,

it is an all-purpose adding machine for stocktaking.

For these exacting times it all *adds up* to the perfect  
**CASH REGISTER** **H.P. TERMS ARRANGED**

Let us, without obligation, demonstrate the value  
to you of the modestly priced

**REGNA SERVICE**  
**PRICES FROM £97 · 10 · 0**

**THE REGNA**  
**CASH REGISTER COMPANY**

(Proprietors: The Joeli Safe Co. (London) Ltd.)

**REGNA**  
**CASH REGISTER**

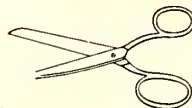
★ Send for full details

**27 JOHN ADAM ST.,**  
**LONDON, W.C.2**  
Telephone  
**TRAFALGAR 3718**

Scottish Branch Office:  
27 Oswald Street, Glasgow, C.1  
Phone: Central 3710

NAME.....

ADDRESS.....



SEE THE REGNA ON STAND No. 18B NATIONAL PHARMACY EXHIBITION, SEPTEMBER 19th — 22nd



## looking for increased output?

If you, like so many manufacturers today, are limited in your production capacity, let us help you step up your output in our own modern plant. Our complete trade processing service includes formulation, compounding, tableting, analytical control and packing for pharmaceutical, proprietary and toilet preparations, etc. We can manufacture exactly to your specifications and always in the strictest confidence. If you have a production problem, discuss it with us — we probably have the answer.

Write, 'phone or wire us your requirements:

### HARKER STAGG LIMITED

LONDON, E.1.

Telephone: STEPNEY GREEN 2022

Telegrams: GALENICALS. FASPHONE LONDON.

## *The name that guarantees accuracy*

- CLINICAL THERMOMETERS
- HOUSEHOLD THERMOMETERS
- INDUSTRIAL THERMOMETERS

### G · H · ZEAL LTD

LOMBARD ROAD · MORDEN ROAD · LONDON · S.W.19

Telephone: LIBERTY 2283 4-5-6 and 4201  
Cables "Zealdem" London



# THE DISTILLERS COMPANY

## *(Biochemicals) Limited*

reduce the price of

# PENICILLIN and STREPTOMYCIN

still further

from 5th September

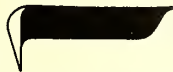
The continued fall in the price of penicillin coupled with its wide range of therapeutic usefulness ensures an ever-increasing demand for the original "wonder drug."

Applications from the retail and wholesale trade for credit on stock held at closing time on 3rd September should be made within 14 days to the supplier by whom the goods were invoiced, quoting batch numbers.

*'DISTIVIT' B<sub>12</sub> is also reduced in price. Credit facilities similar to above.*

*Distributed by*

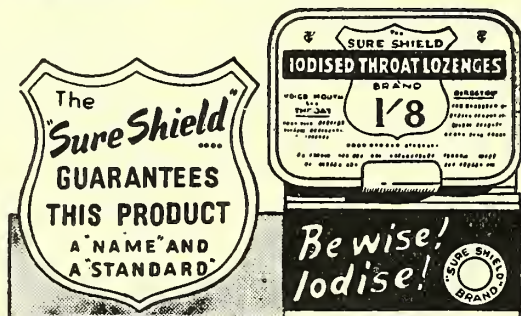
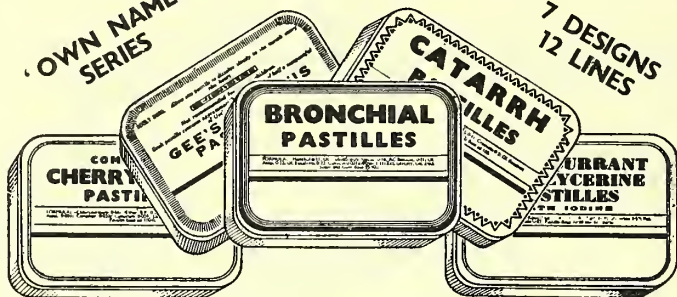
ALLEN & HANBURY LTD.    BRITISH DRUG HOUSES LTD.  
BURROUGHS WELLCOME & CO.    EVANS MEDICAL SUPPLIES LTD.  
IMPERIAL CHEMICAL (PHARMACEUTICALS) LTD.  
PHARMACEUTICAL SPECIALITIES (MAY & BAKER) LTD.



THE DISTILLERS COMPANY (BIOCHEMICALS) LIMITED  
DEVONSHIRE HOUSE, PICCADILLY, LONDON, W.1

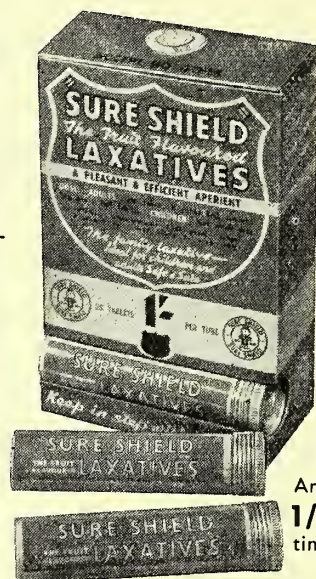
'OWN NAME' SERIES

7 DESIGNS  
12 LINES



ALSO  
1/-  
MOISTURE  
PROOF  
PACK  
—  
SHOW-  
CARDS  
and  
METAL  
STAND  
ON  
REQUEST

TRIAL  
SIZE  
6d.



And  
1/9  
tins.

Write for reply paid order price list and special buying terms for combined parcel of 'Sure Shield' Iodised Throat Lozenges and Laxatives to

**THOMAS GUEST & CO., LTD.** CARRUTHERS ST., ANCOATS, MANCHESTER, 4



MAKE NO MISTAKE, IT'S A  
**BURROUGHS**  
ADDING AND LISTING  
MACHINE THAT COUNTS

Cash Price from £49 **£10** Deposit and 9/4 per week

Brochures Free! Immediate Delivery.  
1955 Brand New! Fully Guaranteed.

**AMALGAMATED BUSINESS MACHINES LTD.**  
Dept. CD/BA 64 Mortimer St., London, W.1.

FREE Price List and Full Range Available CASH REGISTERS, ITEMIZERS for SELF SERVICE, BOOK-KEEPING, Adding and Listing. Autographic Press Button CASH TILLS from 67/6. Everything that really counts

All on View! Showrooms Open 9-6, Sat. 1 p.m.  
Private "EASY CREDIT TERMS" as you like it.

A.B.M. Ltd. (Established 1931.)

Phone: MUS. 0941.

## CYDER VINEGAR

for supplies contact:

**Whiteways Cyder Company Ltd.**  
Whimble, Devon

Telephone: Whimble 332

London Office:

Glasshouse Walk, Vauxhall, S.E.11. Tel: Reliance 115  
No Licence Required

# THANK YOU, MR. CHEMIST,

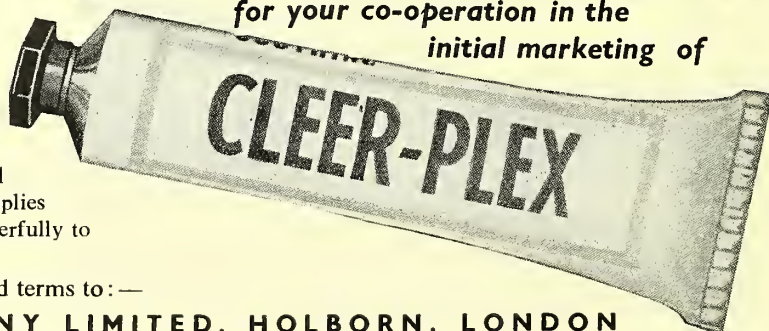
for your co-operation in the  
initial marketing of

This modern ethical treatment for all common skin disorders has met with medical approval.

We have every confidence that this success will continue as our national advertising is expanded and increased supplies are made available. We look forward cheerfully to your continued support.

Write for list of wholesale stockists and terms to:—

**WESTCOTT & COMPANY LIMITED, HOLBORN, LONDON**





## EYEBROWS! PLUCK WITH EASE!

At long last a Spring Action Tweezer that holds the minutest article with an unfailing grip. This new British Patented tweezer makes eyebrow plucking simple and sure. Ask for the 'GREBA' Tweezer... it costs no more than an old type quality tweezer. Obtainable from Chemists

Manufactured by  
ARCFIELD  
53 Tottenham Court Road, London, W.1.

greba

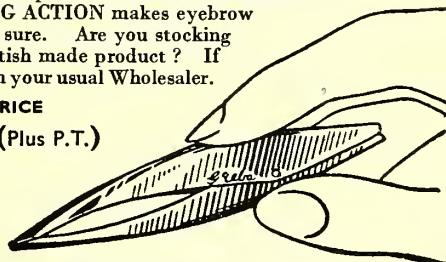
# TWEEZERS

★ SPRING ACTION  
★ STAINLESS STEEL

# They GRIP!

Just as the eyes in the GREBA advertisements in the Women's Journals hold the attention immediately, so do GREBA Stainless Steel Tweezers themselves hold the minutest article in an unfailing grip, without effort or tension. That's why sales are going up and up. The GREBA is different! Its patented SPRING ACTION makes eyebrow plucking simple and sure. Are you stocking this outstanding British made product? If not, order NOW from your usual Wholesaler.

TRADE PRICE  
18/- DOZ. (Plus P.T.)



# They GRIP!

Wholesale and Export Enquiries to: — ARCFIELD OPTICAL MANUFACTURING COMPANY LTD. (Light Engineering Section)  
53, TOTTENHAM COURT ROAD, LONDON, W.1.

## Price reductions for BOOTS PENICILLIN & STREPTOMYCIN as from 5th September 1955

NEW NOMINAL RETAIL PRICES. All subject to usual discounts.

### Penicillin (Sodium or Potassium Salt)

0.1 m.u.	1/-	1.0 m.u.	2/-
0.2 m.u.	1/1½	5.0 m.u.	7/6
0.5 m.u.	1/4½	10.0 m.u.	12/6

### 'Bi-Stabillin' (Procaine Penicillin Fortified for Aqueous Suspension)

Vials containing:

Procaine Penicillin G, 0.3 m.u.	{ Box of 10—15/-
Cryst. Sodium Penicillin G, 0.1 m.u.	{ Singles 1/6

Vials containing:

Procaine Penicillin G, 0.9 m.u.	{ Box of 10—28/9
Cryst. Sodium Penicillin G, 0.3 m.u.	{ Singles 2/10½

### 'Pro-Stabillin' (Procaine Penicillin G. for Aqueous Suspension) Vial of 3 m.u. 6/-

### 'Pro-Stabillin Oily' (Procaine Penicillin Oily Injection) 0.3 m.u. per cc. 10 cc. vial 7/1½

## 'VIULES'

(Medical Cartridges)

### 'Pro-Stabillin A.S.' or 'Pro-Stabillin Oily'

	BOX OF 6	BOX OF 10
0.3 m.u.	9/-	144/-
0.6 m.u.	12/-	194/-
0.9 m.u.	15/9	256/6

STREPTOMYCIN VIULES 1.0 gm x 6 - 15/- 1.0 gm x 100 - 244/-



Literature and further information from the Wholesale & Export Department

BOOTS PURE DRUG COMPANY LIMITED, NOTTINGHAM, ENGLAND

(Nottingham 45501) London Sales Office: 71 Fleet Street, London, E.C.4 (Fleet Street 0111)

# —PRICE REDUCTIONS—

ELI LILLY & COMPANY LIMITED

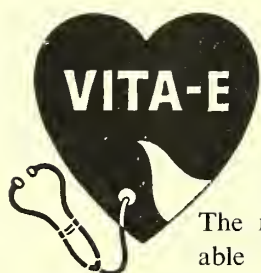
Announce the following price reductions for Ampoules 'DURACILLIN A.S.' as from  
Monday, September 5th, 1955.

	OLD LIST PRICE	NEW LIST PRICE
'DURACILLIN A.S.' 10-c.c. ampoule ... ..	8/1½	7/1½

Applications from retail pharmacists for credit on stocks held at closing time on September 3rd, should quote batch numbers, and should be made direct to Eli Lilly & Co., Ltd., within 14 days.

*Lilly*  
TRADE MARK

ELI LILLY & COMPANY LIMITED, BASINGSTOKE, HANTS



## Alpha tocopherol (Vitamin E) for CARDIOVASCULAR-RENAL DISEASES

The natural vitamin E available only since 1948 must not be confused with the wheat germ oil in use before that date with its limitations as to potency and stability.

The natural vitamin E of today comprises a concentrate distilled from the oils of cottonseed, palm, soya bean, etc.

The standard laid down by the League of Nations is that 1 international unit = 1 mgm. of d.l. *alpha* tocopheryl acetate.

The VITA-E Gelucap (75 i.u.) heads the

list of brands approved by the Vitamin E Society and is that recommended by the Shute Foundation for Medical Research and used with such conspicuous success at the Shute Institute.

Natural Alpha Tocopherol Succinate in Tablets containing 50 i.u. and 200 i.u. of Vitamin E is now available. This is of particular value in veterinary practice.

*Literature on request*

**WE ARE EXHIBITING ON STAND NO. 14A AT  
THE NATIONAL PHARMACY EXHIBITION.**

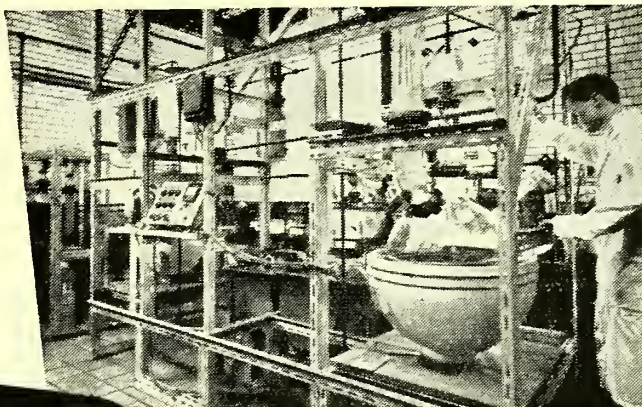
*Sole Manufacturers:*

**THE BIOGLAN LABORATORIES LTD., HERTFORD, HERTS, ENGLAND.**

*Specialists in Hormones and Vitamins*

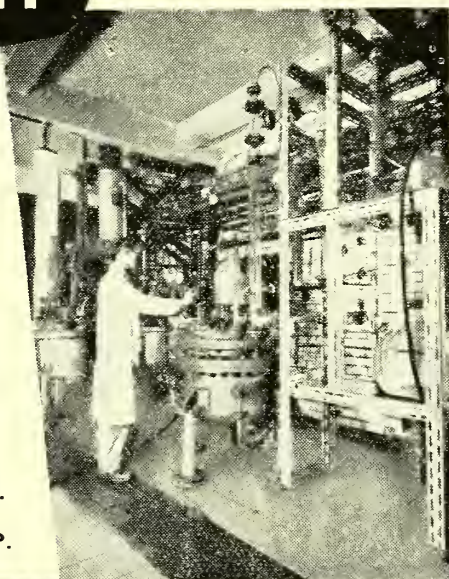
# BARBITURATES

Large glass reaction vessel for investigating intermediate production



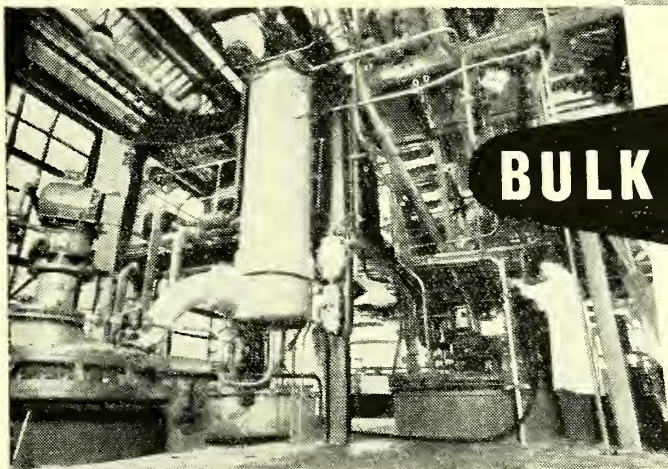
## DEVELOPMENT

As above with 25-gallon enamel cast iron vessels for larger scale trials



Phenobarbitone B.P.	Phenobarbitone Sodium B.P.
Barbitone B.P.	Barbitone Sodium B.P.
Butobarbitone B.P.C.	Amylobarbitone B.P.C.
Amylobarbitone Sodium B.P.C.	Cyclobarbitone B.P.C.
Cyclobarbitone Calcium	Hexobarbitone B.P.
Methylphenobarbitone B.P.	Quinalbarbitone Sodium B.P.

## BULK PRODUCTION



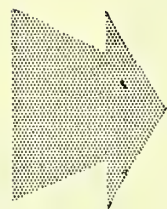
Bulk production of esters for Barbiturates



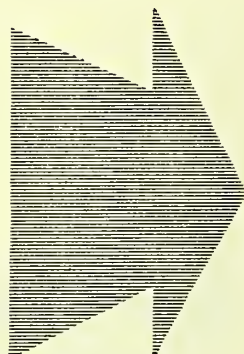
GEIGY PHARMACEUTICAL COMPANY LTD  
Rhodes - Middleton - MANCHESTER

FC. 23

# ***PREVIEW OF EXTRA PROFIT !***



**\* STARTING SOON — THE BIGGEST,  
MOST POWERFUL, MOST CAREFULLY  
PLANNED ADVERTISING CAMPAIGN  
EVER DEvised FOR MILO**



- \* PREVIEW OF FIRST NATIONAL LARGE SPACE.** This advertisement will start off the campaign in September and October.
- \* LARGE SPACE ADVERTISEMENTS** (half page and 13" x 5 columns) in the big circulation National newspapers and magazines—*regularly*—from October onwards.
- \* ATTRACTIVE DISPLAYS** to tie in with this new sales theme. Crowners, showcards and display builders are yours for the asking.
- \* IT'S GOING TO BE MILO THIS WINTER.** This powerful campaign means better-than-ever sales for Milo — extra profit for you.
- \* STOCK AND DISPLAY MILO NOW !**



**MILO** NESTLÉ'S FOOD DRINK

...and ...  
...ally tattooed man is being  
...by the London Tattoo  
...The prize: A trophy  
...S. tattoo enthusiasts.  
...ADAM, Sunday — France  
...the European bridge title  
...day. Britain, the world  
...one, came seventh.—A.P.

Of the 32,500 State-owned lorries  
to have been handed back to  
private hauliers under denational-  
isation in 1953, only about 15,000  
have been sold.  
The intention may be to sell off  
more of the 17,000 remaining un-  
sold under a new plan.

...Ship, 21ft. ...  
...Baronet in 1970. Sir Frank built up  
the business into the present con-  
cern, with assets of £4,500,000.  
FRANKFURT, Sunday — The Duke  
of Edinburgh, who is visiting  
Western Germany, today went to  
a porcelain exhibition at a castle  
near Darmstadt.—B.U.P.

He ...  
...he moved to California, ...  
...as a chef, and bought a restaur-  
...  
...Customers, he found, enjoyed  
his Norwegian specialities. He  
cultivated a pleasant, friendly  
manner. They liked that, too.  
Said Beverly: "I started

...obi, Royal Air Force Station,  
...where airmen recently boycotted  
the mess in protest against the  
food.  
An official statement said the  
source of infection was food  
"from non-Service handlers."—  
A.P.

which ...  
...over the hills  
...covered with  
...They brought  
...have become a  
...But how, ...  
...anyone's wool-  
...now number  
\$5,000,000.  
It was a  
great-grandson,  
us to stay two ...  
Caroline worked  
factory and I  
we saved more  
We had a  
extra income  
talks and attri-  
the national  
land.  
New Zealand  
and commerce  
The advertiser,  
American patte

# How you feel today depends on how you slept last night!



**HOW DID YOU SLEEP LAST NIGHT?** Nothing runs you down quicker than insufficient sleep. You feel tired out and depressed. And because you are tired your whole system is thrown out of order. The natural process which recharges your body with nervous energy slows down. You start worrying and this also saps your energy and prevents you sleeping. There is only one way to break this vicious circle—your body and mind must learn to relax. *And the best way to relax at night is to drink a comforting cup of Milo.*

**HOW MILO HELPS YOU** Milo is the famous food drink made by Nestlé's. It's good—very good for relaxing people whose 'nerves' won't let them rest. Drink a cup of delicious chocolate-flavoured Milo tonight. The first thing you'll notice is a definite sense of increased well-being. That's Milo's concentrated goodness digesting easily into soothing nourishment. Now . . . relax. Let yourself succumb to delightful drowsiness as Milo's comforting warmth gently nudges you into sleep. Deep, sound sleep.

**WHY MILO HELPS YOU** Milo is the most modern food drink made today. You'll love its wholesome chocolate flavour. It tastes better. It has more to it. Milo is the pure concentrated goodness of full cream milk blended with malt extract and added calcium, magnesium and sodium phosphates, magnesium glycerophosphate, yeast, Vitamin D and Vitamin B<sub>1</sub>. This is why Milo packs so much more soothing nourishment per ounce.

**START TONIGHT** Let's say it once more. How you feel tomorrow depends on how well you sleep tonight. But you can start doing yourself some good today. You can buy exactly the same brand of Milo (made by Nestlé's) as used in hospitals and nursing homes at your nearest chemist or grocer. We strongly recommend Milo as a delicious drink at all times. Everyone enjoys it for 'elevenses'. Children love it for breakfast. But above all . . . Milo helps you to sleep better. Buy some today.



# MILO

means Goodnight!

ANOTHER OF NESTLÉ'S GOOD THINGS



**Sac**  
We intend  
Auckland un-  
Karen offered to  
wanted us to s  
thoroughly.  
The day bef  
lington I had t  
being sacked  
tooth taken ou  
fore and arriv  
late for work.  
"Get out,"  
shouted. "You  
sacked men be  
late."  
The conversa-  
"I'm sorry," I  
he said.  
"I was about  
"Fired."  
During this  
tion I did not  
ting sacked  
days' extra  
whereas resign  
short pay. A  
was worth a  
paper.

**Highe**  
Our next job  
factory deep in  
had heard the  
staffed and all  
work. I was  
like a fish in  
labelled them.  
It was my his  
85 an hour. The  
also far bet  
Wellington.  
In a sweet  
sphere we ha  
playing class  
frequently vis  
teria for busi  
were a swim  
swing and a s  
field for future.  
The nearest v  
Mik. A  
enough at the  
take us to A.  
Miki Miki and  
the Manawatu  
central moun  
North Island.  
Out of rich  
the Desert Flo  
of grass and  
nothing since  
snakes in New  
any animals su  
desert.

**Cool w**  
The moun  
snow and soon  
country and  
heavily stocke  
North of  
thermal area s  
of blowholes and  
the first time  
hotel with centr  
sulphur spring  
sonorific bath.  
The travel  
eye on the time  
two minutes af  
ing dinner and  
set a scout  
On entering  
must quickly c  
through which e

From NOEL  
Tokio  
MR Ichiro  
Japan's  
ister, today  
warned Soviet  
unless her  
the Soviet-J  
talks in Lon  
more reasona  
the cold war  
be stepped up  
Sitting in a c  
armchair, the  
Japan waggle  
he always doe  
and said to r  
interview:  
"Apart from  
there is no que  
the two major an

# 'TUAMINE SULPHATE'

## PLASTIC SPRAY PACK

presents 'Tuamine Sulphate' brand 2-Aminoheptane Sulphate in a handy versatile container, suitable for pocket or handbag, which will give spray or drops as desired.

'Tuamine Sulphate' is a safe vasoconstrictor indicated for the relief of nasal congestion.

- Prompt and prolonged action
- No secondary engorgement
- No effect on blood pressure
- No stimulation of central nervous system
- Non-irritating—suitable for infants and children

Repeated use does not produce tolerance



PLASTIC SPRAY BOTTLE CONTAINING 15 c.c.,  
RETAIL PRICE 3/6

ELI LILLY & COMPANY LIMITED, BASINGSTOKE, ENGLAND

1896



1955

## PIONEER OF PRICE PROTECTION

The Council of the Proprietary Articles Trade Association reminds Retail Chemists that for nearly sixty years the P.A.T.A. has ensured that the proprietary articles included in its List are sold at "protected" prices, providing chemists with fair profit margins.

The P.A.T.A. Council has been unremitting in its efforts to preserve and promote this essential system of price protection. These efforts will be continued during the critical months ahead when the introduction of legislation affecting the P.A.T.A. is expected. Then the Council may need (and may ask for) the concerted and individual support of all P.A.T.A. members.

## THE PROPRIETARY ARTICLES TRADE ASSOCIATION

43 Gordon Square, London, W.C.1 (Euston 3275)

Secretary: H. E. CHAPMAN, M.P.S., F.C.S., J.P.

# I.C.I. PENICILLIN PRICES DOWN AGAIN

Imperial Chemical (Pharmaceuticals) Limited announce further reductions in the prices of Penicillin; taking effect from September 5th. The new list prices, subject to trade discount, are given below.

## 'AVLON' CRYSTALLINE PENICILLIN G (Sodium Salt) B.P.

### LIST PRICES EACH

	s.	d.
* 0.1 mega unit bottles .....	1	0
* 0.2 " " " " .....	1	1½
0.5 " " " " .....	1	4½
1.0 " " " " .....	2	0
2.0 " " " " .....	3	3
5.0 " " " " .....	7	6
10.0 " " " " .....	12	6

## 'AVLON' PENICILLIN G (Potassium Salt) BUFFERED

### LIST PRICES EACH

	s.	d.
1.0 mega unit bottles .....	2	0
5.0 " " " " .....	7	6
10.0 " " " " .....	12	6

## 'AVLON' PENICILLIN G (Sodium Salt) BUFFERED

### LIST PRICES EACH

	s.	d.
5.0 mega unit bottles .....	7	6
10.0 " " " " .....	12	6

## 'AVLOPROCIL' PROCAINE PENICILLIN G OILY INJECTION (300,000 units in 1 c.c.) WITH ALUMINIUM STEARATE

### LIST PRICES EACH

	s.	d.
10 c.c. bottles .....	7	1½

## 'AVLOPROCIL' A.S. CRYSTALLINE PENICILLIN PROCAINE SALT AQUEOUS SUSPENSION (300,000 units in 1 c.c.)

### LIST PRICES EACH

	s.	d.
5 c.c. bottles .....	3	10½
10 c.c. " " " " .....	7	1½

## 'AVLOPROCIL' N.A. PROCAINE PENICILLIN INJECTION FORTIFIED

### LIST PRICES EACH

	s.	d.
0.4 mega unit bottles .....	1	6
4.0 " " " " .....	7	6

## 'AVLOPROCIL' DRY PROCAINE PENICILLIN G. B.P. DISPERSIBLE POWDER

### LIST PRICES EACH

	s.	d.
* 0.3 mega unit bottles .....	1	4½
0.9 " " " " .....	2	3
3.0 " " " " .....	6	0

## 'PENAVLON' PENICILLIN TABLETS

### LIST PRICES EACH

	s.	d.
200,000 units, tubes of 10 .....	3	1
bottles of 100 .....	23	0
500,000 units, tubes of 10 .....	6	6
bottles of 100 .....	55	6

\*The prices for these packs are unchanged.

**IMPERIAL CHEMICAL (PHARMACEUTICALS) LIMITED**

*A subsidiary company of Imperial Chemical Industries Limited*

**WILMSLOW, MANCHESTER**



## NATURE'S WAY TO HEALTH

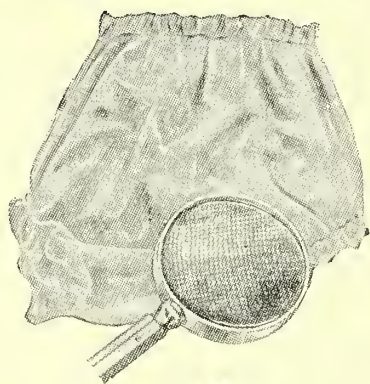


### Heath & Heather's FAMOUS HERBAL REMEDIES

for the safe and successful treatment of all common ailments. They are obtainable from Heath & Heather Branch shops and Agents everywhere throughout the United Kingdom.

HEATH & HEATHER LTD., Herb Specialists, St. Albans

## ERICA... now introduce BABY PANTS that B·R·E·A·T·H·E



**3** SIZES

Medium, Large, Extra Large

Representing Hygiene's newest development, the plastic material now used incorporates thousands of well-nigh invisible "pores" permitting the passage of air which in turn promotes a cooling action yet at the same time retaining moisture.

- ★ ACID-RESISTANT!      ★ NON-TOXIC!
- ★ WATERPROOF & BOILABLE!
- ★ A GUARANTEE AGAINST NAPPY RASH!

**WISE MOTHERS INSIST ON ERICA!**

Obtainable from your usual wholesaler

**ERICA PRODUCTS LTD., 37 FAIRFAX ROAD, LONDON, N.W.6**

Tel : Maida Vale 2931


# HERE'S A BIG SCHEME TO BRING YOU EXTRA SALES

## — ON ALL FLASH EQUIPMENT

These four shots are taken from the new series of lively "Photoflux" advertisements which will be appearing in *all* the principal amateur photographic magazines. Each advertisement will feature a photograph and explain the way 'flash' was used in taking it.

These advertisements—fascinating and informative—will sell flash photography as it has never been sold before! By night or by day, with colour or with black and white, in summer or in winter, there is always a use for 'flash'—that's the story that will be told and that's the story that will fascinate thousands of photographers.

*You stand to gain in a big way from this publicity.* Not only from increased sales of "Photoflux" flashbulbs, but from extra sales of *all* kinds of flash equipment—as well as increased D & P trade. So make sure your window and counter shows quite clearly that you stock "Photoflux" flashbulbs—especially the new PF 1 Capless bulb.



**Blue Safety Spot:** To ensure dependability and consistent results, every "Photoflux" flashbulb incorporates the blue spot, invented and developed by Philips.



# PHILIPS

# "PHOTOFLUX" FLASHBULBS

(Made in Holland)

for "Perfection in a Flash"

PHILIPS ELECTRICAL LTD., LIGHTING DIVISION, CENTURY HOUSE, SHAFTESBURY AVENUE, LONDON, W.C.2  
"PHOTOLITA" PHOTOFLOOD LAMPS • DARKROOM SAFELIGHT BULBS • PHOTOCRESCENTA ENLARGER LAMPS AND PROJECTOR LAMPS (PF803)



Flash and the sun



Flash and colour



Flash in the home



Flash at play



*the finishing touch*

*The finest lacquer and easy to use . . .  
at a price within easy reach of you*

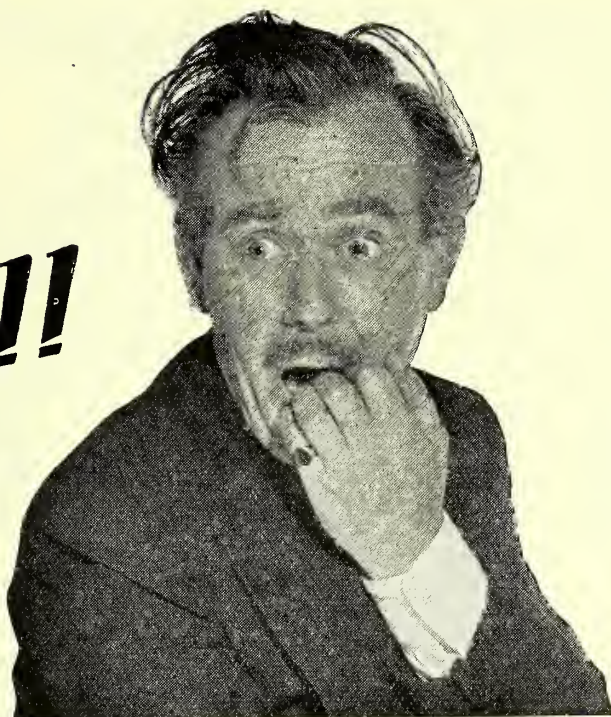
**RETAIL 3'6 REFILLS 2'3 each**

**JAMES HARDCASTLE & Co. 432 Edgware Rd., W.2**  
Suppliers for Greater London Area, or direct from Rosedale  
Products Ltd. When ordering direct, please name usual  
wholesaler.

**ROSEDALE PRODUCTS LIMITED**

ROSEDALE WORKS, BIRKBECK ROAD, DALSTON, E.8

***Stocks!!***



*it's time to order*

**CROOKES**

**HALIBUT OIL** *again!*

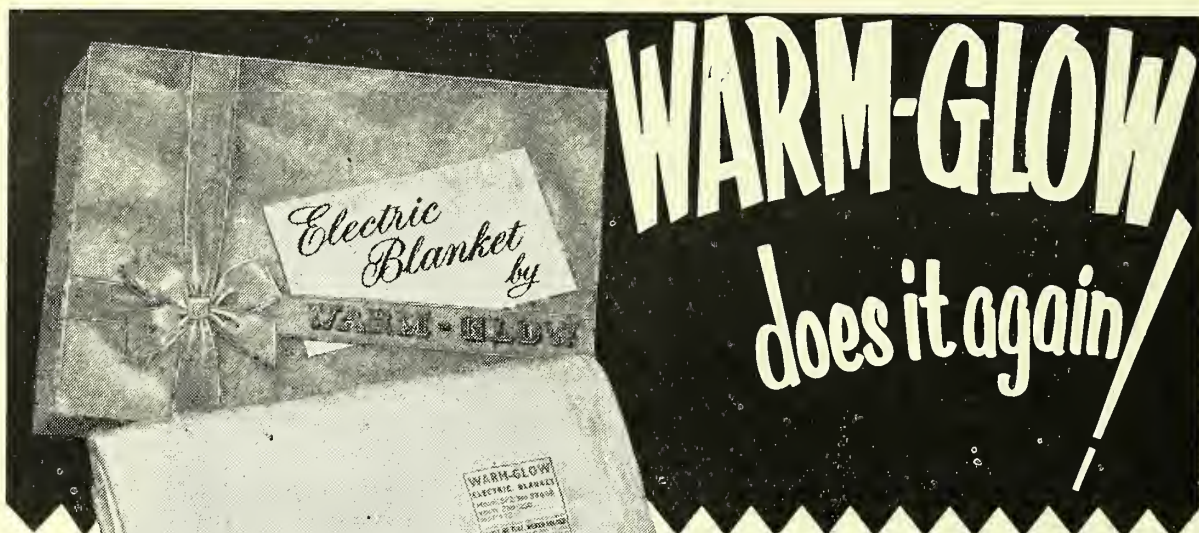
Time certainly does NOT stand still . . . before you can say "coughs and colds" . . . winter is just around the corner and it's time to order your stocks of CROOKES HALIBUT OIL. More and MORE of your customers will be relying on Crookes Halibut Oil to help build up their resistance against winter 'ills and chills' . . . make sure you are ready to meet the big demand. Powerful national advertising will be backing your sales . . . and the usual generous bonus terms will be operating.

**Bonus terms are  
being mailed to you!**

Don't be caught with an empty store-room . . . send in your orders *NOW!*

**CROOKES HALIBUT OIL**

THE CROOKES LABORATORIES LIMITED · PARK ROYAL · LONDON · N.W.10



THE NEW WARM-GLOW POPULAR range starts with the 50" x 28" JUNIOR at 63/- retail, tax paid, to the 60" x 50" DOUBLE at 119/6 featuring the remarkable NEW WARM-GLOW 2-pole cord-switch, neon illuminated, 100 lb. cord-grip, and lovely NEW coloured display boxes to take your breath away.

**Prices from 63/- to £19.0.0**

The WARM-GLOW 'VIGILUX' is the Rolls-Royce of Electric Blankets. It has all the luxury features of The WARM-GLOW de Luxe range below, lovely large woollen blankets, beautiful pastel colours, waterproof elements, safe when wet, and washable at home, but plus the patented infinitely variable illuminated bedside control, the only control which can be set to any temperature, and is self compensating: prices from £11.3.3 to £19.0.0. The well-known WARM-GLOW de Luxe Single Heat range, priced at £8.5.0 to £14.5.0 this year has the NEW illuminated 2-pole cord-switch.



'VIGILUX' ELECTRIC BLANKET  
with Finger-Tip Bedside Control  
Pat. No. 671239

SINGLE HEAT de Luxe ELECTRIC BLANKET  
Pat. No. 445195

ADVERTISEMENTS ARE APPEAR-  
ING REGULARLY THIS AUTUMN  
AND WINTER IN THE DAILY  
EXPRESS, DAILY MAIL, DAILY  
TELEGRAPH, NEWS CHRONICLE,  
TIMES, SUNDAY CHRONICLE,  
SUNDAY DISPATCH, PICTURE  
POST, EVERYBODY'S, PUNCH,  
ILLUSTRATED, Etc.

ASK YOUR WHOLESALE  
FOR FURTHER DETAILS OR WRITE TO DEPT. C.3



**The WARM-GLOW CO LTD • LEIGH-ON-SEA • ESSEX • ENGLAND**  
Telephone • EASTWOOD • 55742      Telegrams • WARMGLOW • LEIGH-ON-SEA

# Use **U·M·P** COLLAPSIBLE METAL TUBES

*and fill them by the*

# **U·M·P** COLLAPSIBLE TUBE FILLING UNIT



This unit consists of Tube Filling Machine, Tube Closing Machine and Tube Crimping Machine. Please write for particulars and descriptive leaflet.

*We are also moulders of PLASTICS to the Trade by injection and compression methods*



THE SIGN OF SERVICE  
AND CO-OPERATION

## **UNIVERSAL METAL PRODUCTS LTD.**

SALFORD 6 LANCs.

Telephone: PENDLETON 4444

LONDON OFFICE: ARGYLE HOUSE, 29/31 EUSTON ROAD, N.W.1. Tel: TERMINUS 2073



**A 6-months-old baby  
can eat all these —  
and often more — in 1 week!**

*Why modern babies are better customers  
for Heinz Strained Foods*

**Modern mothers** are relying more and more on Heinz Strained Foods to give their babies a nourishing, varied diet. That is why modern babies are becoming better and better customers for you.

Just think of it. There are 800,000 babies of Strained Foods age in this country. And the majority already eat Heinz Strained Foods. Yet the *amount and variety* each baby has can be increased enormously.

**First, by advertising.** Heinz new campaign explains why Heinz Strained Foods are so good, and stresses that they are more nourishing than many home-prepared foods.

**Second, by display.** By displaying all 19 varieties of Heinz Strained Foods you can make mothers see for themselves the varied diet that Heinz provide. Ask your Heinz representative for the sales-compelling display material, emphasizing the goodness and variety of Heinz Strained Foods. Displays bring increased sales.

**57 HEINZ**

H. J. HEINZ COMPANY LTD., Harlesden, London N.W.10

## Pond's Price Revisions

As from September 1st, 1955, the Retail Prices of some of our lines have been revised as follows:—

	Old Price	Price from Sept. 1st
Vanishing Cream { jar, small . . .	1/5	1/6
Cold Cream and { jar, medium . . .	2/8	2/9
Liquefying Cream { jar, large . . .	5/-	No Change
{ jar, extra large . . .	10/-	No Change
(Cold Cream only)		
Vanishing Cream { tubes, small . . .	1/4	1/6
Cold Cream { tubes, large . . .	2/4	2/6
Dry Skin Cream { Medium Jars . . .	2/9	3/-
{ Large Jars . . .	5/3	5/6
Face Powder { Small Boxes . . .	1/5	1/6
{ Medium Boxes . . .	2/4	2/6
{ Large Boxes . . .	3/9	No Change
Angel Face { Small (Two-piece Box) . . .	3/2	3/6
{ Large Mirror Compact . . .	7/6	No Change
{ Large Compact Refill . . .	3/6	No Change
Lipsticks { Small . . .	1/6	No Change
{ Large Swivel Case . . .	5/-	No Change
{ Large Refill . . .	2/9	No Change
Talcum Powder { Tins . . . . .	2/9	No Change
Skin Freshener { Small . . . . .	1/9	No Change
{ Medium . . . . .	3/6	No Change
Freshener Pads { Boxes . . . . .	1/7	1/6
Extract { 4½ oz. . . . .	3/-	No Change
{ 10 oz. . . . .	6/-	No Change
Tissue Hankies { Handy Pack . . .	4d.	No Change
{ Small . . . . .	1/-	No Change
{ Large . . . . .	1/6	No Change
{ Extra Large . . .	2/6	No Change

*All these prices include purchase tax*

New Trade Price Lists were despatched to all our customers on August 31st, and extra copies are available on request.

Coffret orders on hand will be honoured at prices quoted prior to September 1st.

**Pond's Extract Company Ltd.**

PERIVALE, GREENFORD, MIDDLESEX

*fresh fields  
of endeavour . . .*



At St. Ives, Huntingdon, the Ransom organisation adds steadily to its store of knowledge in the growing of drugs. Here, on the Company's 500-acre farm, fresh territory is being opened for research and experimental purposes, with the aim of developing new strains of medicinal plants and of evolving still more efficient methods of cultivation. Despite the use of synthetic drugs in medicine today, the world-wide demand for Ransom's drugs and galenicals continues to grow. So also does the capacity of the Company's production plant at Hitchin. Whenever your manufacturing requirements call for drugs and galenicals, ask Ransoms for samples and quotations.

**EXTRACTS • TINCTURES • ESSENTIAL OILS • RESINS • CHLOROPHYLL**

*Actual Growers of*

**BELLADONNA • HENBANE • FOXGLOVE • PEPPERMINT • LAVENDER**

*Established 1846*



**WILLIAM RANSOM & SON LTD.**  
*Hitchin Hertfordshire England*

NOW **KLEENEX** POPS  
MORE MONEY INTO  
YOUR POCKET!



---

**5-case order gives you 5% discount, and that means 5% extra profit (1 gross Pocket-Pack Kleenex counts as  $\frac{1}{2}$  case)**

# FULL SIZED **KLEENEX** — NOW IN THIS POCKET PACK



**40**

← **ACTUAL SIZE!** Neatest, smartest, handiest pocket pack of the lot! Full-sized sheets of soft, gentle Kleenex\* tissue handkerchiefs crisply wrapped in cellophane, ready for pocket or handbag.

## You'll have all the colds in town crowding in!

Stands to reason! We're going to splash the news of this smart little Kleenex pocket pack in a half-page Daily Mirror advertisement, followed by hefty and continuous advertising in the biggest Daily and Sunday newspapers, in women's magazines, and on commercial TV. Pretty nearly everyone in your town is going to know . . . and pretty nearly everyone in your town carries a cold around with them one time or another. That makes just about everyone your customer for pocket Kleenex. Remember, Kleenex outsells all other brands combined!

**Trade Price: 32/- a gross in carton of 12 counter displays**

**Minimum profit: 33½%**

**SHOW POCKET-PACK KLEENEX**  
**-alongside Kleenex in boxes**



- Easy to **FIT**
- Easy to **WEAR**
- Easy to **SATISFY**

**"Eesiness"**

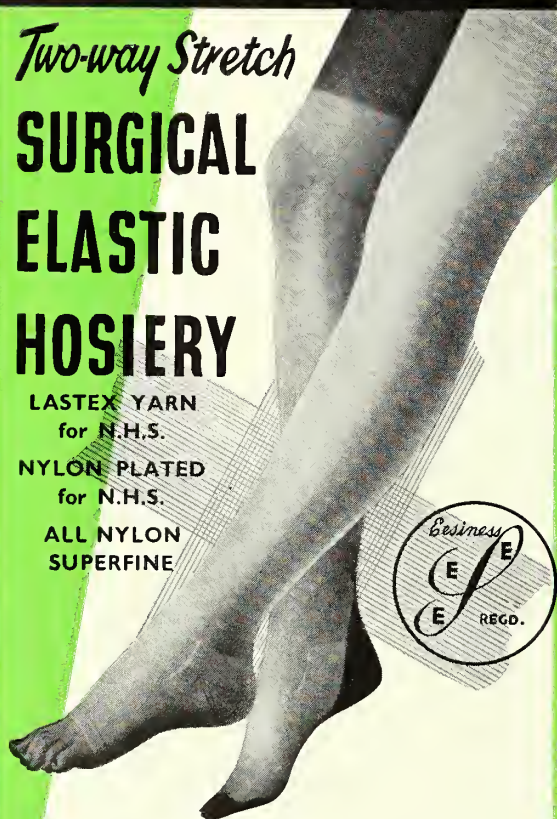
*Two-way Stretch*

**SURGICAL  
ELASTIC  
HOSIERY**

LASTEX YARN  
for N.H.S.

NYLON PLATED  
for N.H.S.

ALL NYLON  
SUPERFINE



**THE FINEST ELASTIC  
SURGICAL APPLIANCES**

**SURGICAL BELTS**

**CORSETS, BRASSIERES**

**SUSPENSORY BANDAGES**

**ELASTIC BAND TRUSSES**

**NATIONAL HEALTH SERVICE APPLIANCES of all Descriptions**

**E. SALLIS LTD.**

**VERNON WORKS • BASFORD • NOTTINGHAM**

PHONE: NOTTM. 77841/2

GRAMS "EESINESS"

**NEW**

**INECTO**

*Colour Crème*

**ADVERTISED ON  
A GRAND SCALE**

- ★ Easily and quickly applied in one application
- ★ Conditions as it tints, leaving the hair silky soft
- ★ Absolutely permanent and undetectable
- ★ Does not affect permanent waving
- ★ Created in the 18 world-famous standard Inecto shades
- ★ Attractive pack with picture directions for use

From your  
usual  
wholesaler

**Price 3/4 complete  
plus P.T.  
retailing at 7/6**

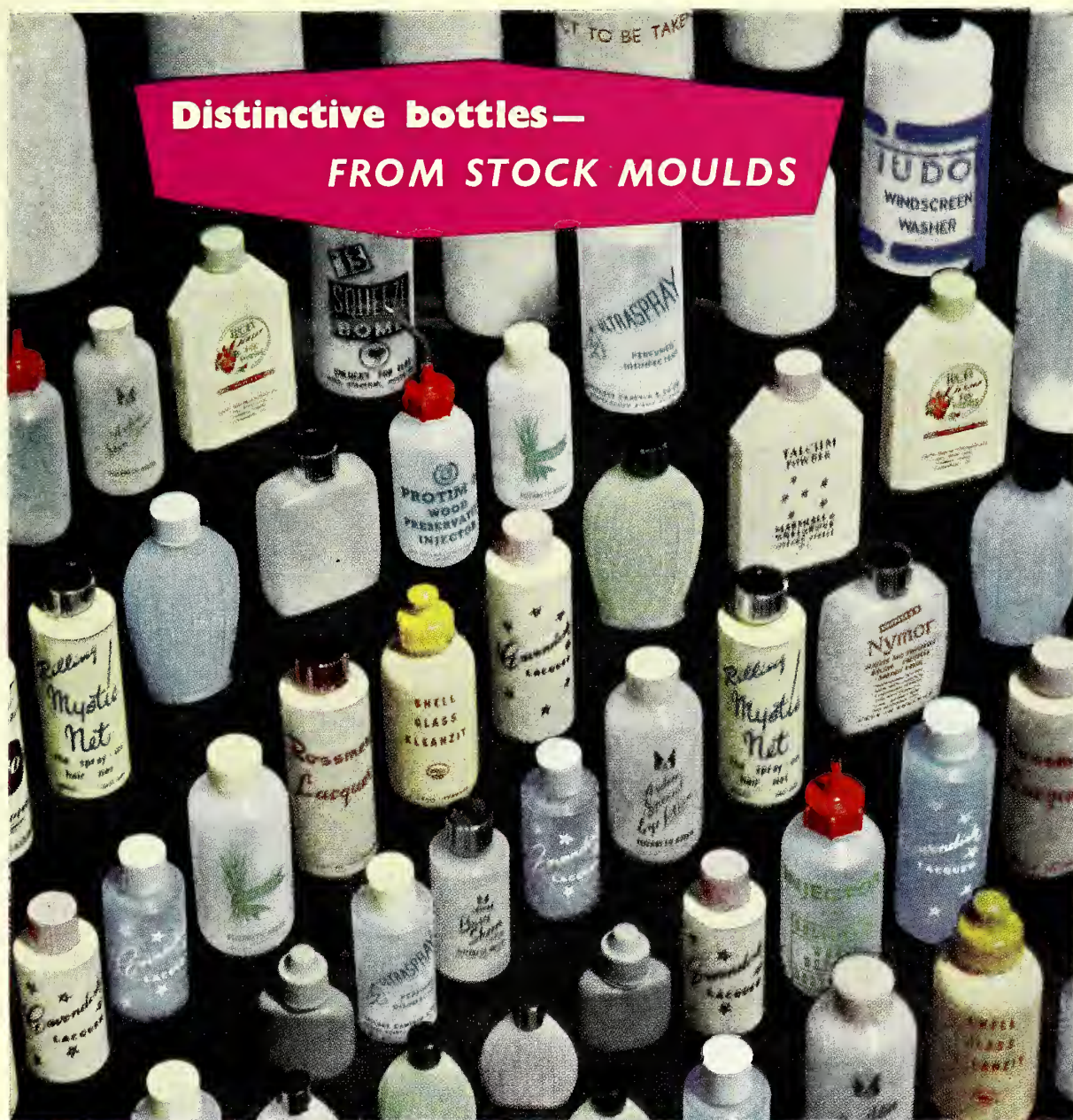


**NEW**

*Shade Indicator  
free on request.*

**INECTO HOUSE, 27 DOVER ST., LONDON W.1**

**HYDE PARK 7541 (12 lines)**



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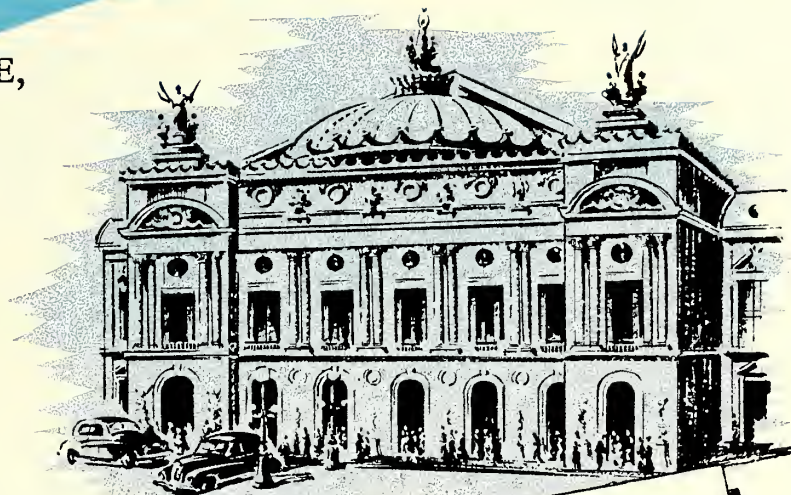


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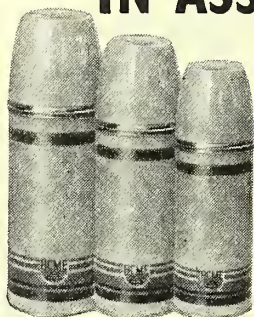
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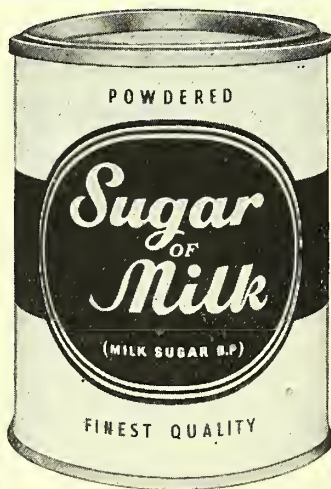
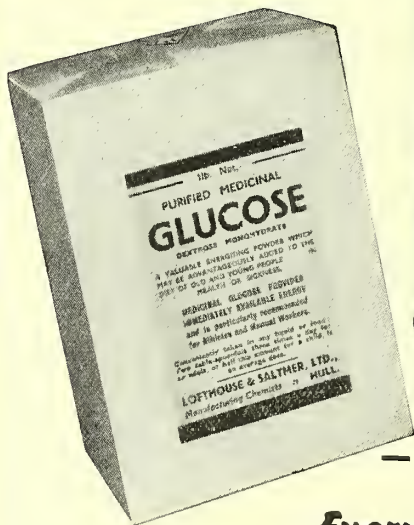
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# THE CHEMIST AND DRUGGIST

ESTABLISHED 1859

The weekly newspaper for pharmacy and  
all sections of the drug, pharmaceutical and  
fine chemical, cosmetic, and allied industries

*Official organ of the Pharmaceutical Society of Ireland  
and the Pharmaceutical Society of Northern Ireland*

Volume 164

September 3, 1955

No. 3941

## CONTENTS

### BRITISH PHARMACEUTICAL CONFERENCE

Opening Session ... ..	261
Early Events ... ..	262
Chairman's Address ... ..	263
Symposium Session ... ..	267
Science Sessions ... ..	270
Personalities ... ..	260
Pictures ... ..	242
Chemists' Cricket ... ..	247
Figures in Pharmaceutical World—33	257
Guide to New Medicaments ...	254
Leading Articles:—	
Pyrogens as Therapeutic Agents	259
Overseas Trade in July ... ..	259
New Factory at Hatfield ... ..	246
Onward from Galen ... ..	256
Thirteen Miles Apart ... ..	248
Topical Reflections ... ..	241
Trade Figures in July ... ..	256

Business Changes ... 244	News in Brief ... 241
Coming Events ... 255	P.A.T.A. ... 276
Company News ... 244	Personalities ... 245
Deaths ... 245	Price Changes ... 276
Information Wanted 258	Print and Publicity ... 255
Irish News ... 240	Scottish News ... 240
Legal Reports ... 244	Sport ... 241
Marriages ... 245	Trade Marks ... 254
New Companies ... 244	Trade Notes ... 245
New Products ... 246	Trade Report ... 275
News of the Week ... 239	Wills ... 257

### INDEX TO ADVERTISERS, Pp. 5 & 6.

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takes up little counter space  
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**Stock, Display, Recommend**

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# The CHEMIST AND DRUGGIST

Volume 164

SEPTEMBER 3, 1955

No. 3941

## Salicylate Hazards

### AN AMERICAN MEDICAL REPORT

THE committee on toxicology of the American Medical Association has adopted a report by the committee on accident prevention of the American Academy of Pediatrics recommending precautions in the handling of salicylates, including aspirin.

The report points out that accidental ingestion or therapeutic overdosage causing salicylate poisoning is an important hazard to children under five years of age. Salicylate compounds caused 113 known deaths in the United States in 1952, eighty-six of them in children under five years of age. Twenty-one were caused by methyl salicylate, forty-one by aspirin. The frequency with which aspirin is involved in childhood poisoning calls for preventive measures. The public believes that the drug is harmless and it is likely to be left where small children may have access to it. With the development of attractively flavoured infants' and children's aspirin, the temptation to young children has been increased.

The precautions that were initially recommended were considered on February 14 by an advisory panel including representatives of industry, medicine, and pharmacy, and the following statement adopted:—

1. The labels of all bottles and packages of salicylate-containing preparations should bear the following minimum statement, clearly visible and in boldface type: "WARNING: Keep out of the reach of children."

2. In lieu of specific dosage recommendations for children under three, salicylate-containing preparations for oral use should bear the following label: "For children under three consult your physician."

3. This group believes that dosage forms of several strengths of children's aspirin are undesirable and looks with favour on concentration by manufacturers, wherever possible, on a standard strength of children's aspirin of  $1\frac{1}{4}$  grains per dosage unit.

4. This group looks with favour on manufacturers not increasing their present maximum amounts of children's flavoured aspirin per package unit and encourages seeking development of a safety closure and container.

5. This group looks with favour on wider and more effective use of educational means to inform physicians, pharmacists, and consumers of the hazards involved in accidental ingestion of salicylate-containing preparations.

## Occupational Diseases

### A COMMITTEE GIVES ITS REPORT

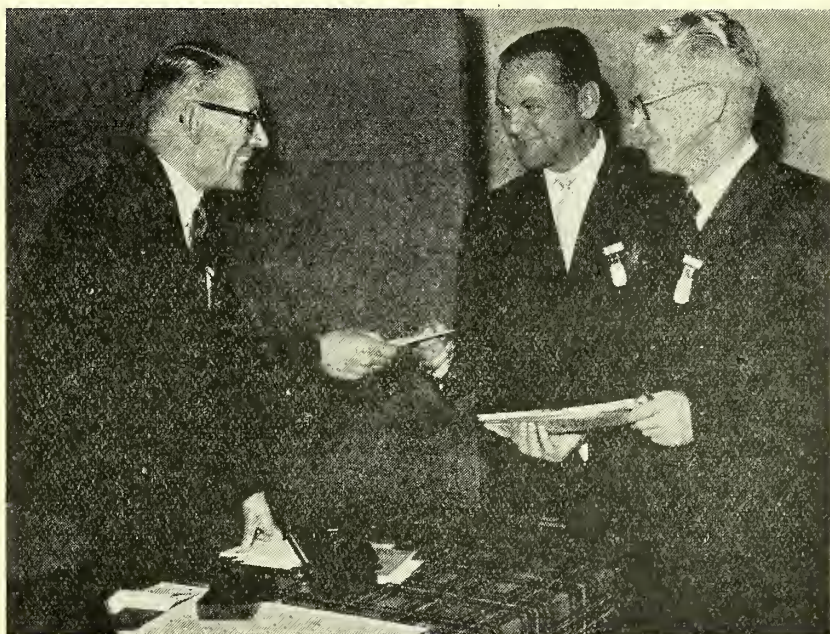
NO change is recommended by a committee appointed by the Minister of Pensions and National Insurance in the present system of prescribing specific occupational diseases against which employees are insured for cash benefits under the Industrial Injuries Insurance scheme. In its report, issued on August 24, the committee stresses that research into occupational health hazards is essential to the effective working of the system, and it urges the use of statistical techniques for that purpose. The Industrial Injuries Advisory Council should, it is recommended, be made responsible for keeping under review the schedule of prescribed diseases, for suggesting diseases that might be prescribed, and suggesting research or investigations bearing on the subject. The report concludes that it would not be

practicable to extend insurance cover to everyone who could show he was suffering from a disease which was probably of occupational origin, because in the present state of medical knowledge many of the claims could not be decided on any reasoned basis. Three members signed a minority report. They do not accept the impracticability of making more comprehensive cover available, though they agree fully with the majority conclusions about occupational health research. The report may be obtained from H.M. Stationery Office (price 1s. 3d.).

## Executive Councils

### MANAGEMENT DISCUSSIONS ON DRUGS

THE management committee of the Executive Councils Association is "loath to interfere," it is understood, in a dispute between medical and pharmaceutical professions over the supply, in England and Wales, of doctors' drug stocks for surgery use on modified EC10 forms. The British Medical Association, it was stated at a meeting of the committee recently, adheres to the policy of extending to England and Wales the system already in operation in Scotland. The National Pharmaceutical Union is opposed to the introduction of any such scheme in England and Wales at present. On another matter the Committee is taking action. It



THE BRITISH PHARMACEUTICAL CONFERENCE OPENS AT ABERDEEN: At the tartan-covered reception desk is the local treasurer (Mr. W. A. Park). With him are Monsieur Ahr, Rheims, France, and Dr. D. A. McCall, the Pharmaceutical Society's resident secretary in Scotland. Other Conference pictures, pp. 242-43. Conference news, pp. 260-75.

is to recommend to the B.M.A. and Ministry of Health that steps shall be taken to end the practice by which some manufacturers of "ethical" proprietaries pack their commodities in such a way that chemist contractors cannot eradicate "what must be termed advertising details" before handing them over to National Health Service patients.

## Glycerin

### STANDARDS FOR VARIOUS GRADES

BRITISH Standards for five grades of glycerin were issued in one volume by the British Standards Institution recently. They are:—B.S. 2621—Soap lye crude glycerin; B.S. 2622—Saponification (hydrolyser) crude glycerin; B.S. 2623—Pale straw glycerin; B.S. 2624—Dynamite glycerin; B.S. 2625—Chemically pure glycerin. Specification requirements are given in respect of each grade, together with methods of sampling and of analysis of the materials. Some further methods of test, additional to those required for determining compliance with the British Standard, are also given in an appendix.

The specifications for the two crude glycerins are based on those given in the International Standard Methods for crude glycerin (1911), with modifications deemed to be appropriate for present conditions and use. The specifications for pale straw glycerin and dynamite glycerin are established from recommendations from British industry, both producers and consumers, and the British Standard for chemically pure glycerin is based on the 1953 British Pharmacopoeia monograph for glycerin. B.S. 2621-5 may be obtained from British Standards Institution, Sales Branch, 2 Park Street, London, W.1. Price 10s.

## Prescription Pricing

**BUREAU SUPERINTENDENT ON HIS WORK**  
SPEAKING at a meeting of Huddersfield branch and association on August 4, Mr. C. Hindle, A.C.C.S. (superintendent, Bolton prescription pricing bureau) outlined the work of the bureau. He gave details of staff-training and the pricing and checking of scripts, and showed examples of charts from which pricers work. Chemists could help, he said, by endorsing scripts with details of what had been supplied whenever there was a possible cause for doubt, and particularly when alternative strengths of the same preparation were manufactured. Such scripts must also have the endorsement signed by the prescriber when they had been issued incomplete for Schedule 4 preparations. Mr. Hindle was thanked on behalf of the meeting by Mr. C. Thompson.

## Blood Donors

### MORE NEEDED DESPITE RECORD GIFTS

SPEAKING at the tenth anniversary of Sheffield blood transfusion centre on August 27, Miss Pat Hornsby-Smith (Parliamentary Secretary to the Ministry of Health) said that it was not generally recognised that seventy times more blood was now being used in

hospitals than before the war. To meet that demand more than one donation every minute was required throughout the year. Although in 1954 there had been a record number of gifts of blood, it was essential that there should be more regular donors.

## I.P.F. Assembly

### TICKETS AVAILABLE FOR BANQUET

THE organisers of the sixteenth general assembly of the International Pharmaceutical Federation, London, 1955, announce that tickets are available in limited number for the Congress banquet and dance which is being held at Grosvenor House, Park Lane, W.1, at 6.30 p.m., on Friday, September 23. The price of the ticket is £3 10s., including wines. Applications, which should be sent to the Secretary of the Organising Committee, 17 Bloomsbury Square, W.C.1, will be dealt with in strict rotation and should be received before September 12.

## IRISH NEWS

### Ulster Associates

#### SPECIAL MEETING OF COMMITTEE

A SPECIAL meeting of the Associates' Committee and social subcommittee of the Ulster Chemists' Association was held under the chairmanship of Mr. G. E. McIlhagger on August 25 to honour Mr. J. C. C. Millen (treasurer of the Section) prior to his taking up an appointment in Rhodesia. Tributes to Mr. Millen's work for the committee were paid by Messrs. G. E. McIlhagger and G. P. Taylor, and on behalf of the committee, Mrs. C. O'Rourke presented Mr. Millen with an engraved Ronson lighter. Returning thanks for the gift, Mr. Millen said that he had certainly enjoyed his term on the committee and valued highly the friendships made there. He said he would like to remain a member of the Section, and would continue to take an interest in its affairs. Following the special meeting, the social subcommittee met to settle finally the "treasure hunt" accounts, and to engage in preliminary discussion on the holding of an informal dance on October 28.

## Activated Carbon

### PRODUCTION TO START IN ULSTER

LORD Glentoran, Ulster Minister of Commerce, announced in Belfast on August 24 that the first factory in the United Kingdom to manufacture activated carbon from peat was to be established near Londonderry. After negotiations with British Ceca, Ltd., a new company, Ceca (Northern Ireland), Ltd., had been formed to operate the venture. Charles Tennant (Northern Ireland), Ltd., chemical manufacturers, would be associated with the work. At present activated carbon from peat is imported from the Continent. No details of the process have been divulged but it is learned here that the method of production in Northern Ireland is an advance on the Continental system. Production is due to start in 1956.

## Flies "Invade" Dublin

### RECORD SALES OF FLY-CATCHERS

DUBLIN has been suffering one of the worst fly "invasions" of recent years and fly-catching paper sales are creating a post-war record. The city's Health department reports that the flies seem to have a resistance to DDT, and the Department has ordered another substance "I.B.F." from Switzerland. Chemists report that housewives are falling back on the old-fashioned sticky flypaper.

## SCOTTISH NEWS

### Retail Pharmacy Wages

#### MINIMUM SCOTTISH RATES AGREED

AN agreement between the Scottish Pharmaceutical Federation and the Union of Shop, Distributive and Allied Workers fixes minimum weekly rates of wages and conditions of employment for workers in retail pharmacy in Scotland. The agreed wage rates are:—*Qualified managers* (male) with average weekly sales up to and including £100: £11 12s. 6d.; (female): £11 0s. 6d. For each additional £10 weekly turnover, an additional 2s. up to a £600 maximum. *Qualified assistants* (male), in first year after qualifying: £9 2s.; second: £9 12s.; third: £10 2s.; (female), first year: £8 15s.; second: £9 5s.; third: £9 15s. *Unqualified assistants* who have completed not less than three years' continuous experience in pharmacy and are wholly or mainly engaged in dispensing: Age twenty (male), £5 6s.; (female), £4 14s. 6d.; age twenty-one (male), £5 17s.; (female), £5 5s. 6d.; age twenty-two (male), £6 8s.; (female), £5 16s. 6d.; age twenty-three (male), £6 19s.; (female), £6 7s. 6d.; age twenty-four (male), £7 11s. 6d.; (female), £7. *Shop assistants*, excluding apprentices: 41s. 6d. (male), 37s. 6d. (female) at age fifteen, rising to 130s. 6d. (male), 96s. 6d. (female), at age twenty-three. Rises for age are to be made in the first full pay week after the birthday occurs, and qualified assistants' rises in the first full pay week after the anniversary of registration. The normal working week is fixed at forty-six hours. Overtime payments are to be:—*Weekdays*, time-and-a-half; *Sundays and customary holidays*, double-time; on *normal weekly half-day*, time-and-a-half after 1.30 p.m., irrespective of whether the normal working week is worked in the week in which the overtime is performed. Qualified workers are not to receive normal overtime pay for rota duties, but to be paid as follows:—*week-days*, 6s. per hour; *Sundays and customary holidays*, 10s. per hour. Provision is made for annual holidays and for payment during sickness. The agreement came into operation on August 29.

## Isotopes in Medicine

### TALK BY PHYSICIST BACK FROM GENEVA

THE introduction of isotopes did not compare in the slightest degree in its value to medicine with the discovery of penicillin, declared Dr. J. M. A. Lenihan (physicist to the Western Regional Hospital Board) in an

address in Glasgow on August 24. "The main use of isotopes is as agents for laboratory tests and for research, and that is important enough. But isotopes are not the answer to any group of diseases."

## NEWS IN BRIEF

THE Chartered Society of Physiotherapy is celebrating its diamond jubilee at its annual congress in London, September 22-24.

DONCASTER chamber of commerce reports that the proposal to close retail shops on Mondays finds general favour.

At the annual meeting of the Self-Service Development Association on August 18, Mr. R. F. Rooke, M.B.E., was re-elected *Chairman*, Mr. G. W. Scales, M.B.E., *Treasurer*.

By his express wish the ashes of Mr. J. F. Williamson, M.P.S., 86 Moss Lane, Swinton, Lancs, who died in January, were, on August 20, scattered over the sea in Morecambe Bay.

"In view of the busy time before Christmas," Brownhills chamber of trade has decided to hold its third annual shopping festival after the Christmas season.

A FIRST international congress on medical ethics is being held in Paris, France, September 30 to October 3. Subjects for discussion include the moral problems in applying new diagnostic and therapeutic agents.

THE National Union of Co-operative Officials is asking the National Wages Board for an increase of twenty per cent. for managing pharmacists. The claim is being considered on September 13.

A GREEK gynaecologist, Dr. Vrysiis Samara, has been awarded the two-thousandth fellowship in Europe by the World Health Organisation and is studying the medical application of radioisotopes at the Royal Marsden Hospital, London, and at Harwell.

A PAKISTAN Customs Notification (27-C), dated August 16, reduces the general rate of import duty on drugs and medicines to 20 per cent. *ad valorem*. The United Kingdom's Preferential Margins of duty on those items is retained.

OWING to a fracture of the leg sustained a few days before the Conference, Mr. James Coleman (registrar of the Pharmaceutical Society of Ireland) was unable to travel to Aberdeen. A similar mishap a year ago prevented his attendance at the Oxford Conference of 1954.

EXTERNAL evening courses in materials handling and work study are being arranged by the College of Production Technology at London, Glasgow, Sheffield, Manchester, and Leeds. Details may be obtained from the Registrar, College of Technology, Charing, Ashford, Kent.

## SPORT

**Golf.** — LIVERPOOL AND DISTRICT CHEMISTS' ASSOCIATION golfing society, at West Derby golf club, Liverpool, on August 24, *Ucal cup* and *tankard*, G. N. Quayle (17) 72; *I.C.I. prize*, K. McIntosh (15) 73; *Aspro cup* and *prize*, A. W. Dellar (24) 81; 2, M. Atherton (20) 81.

# TOPICAL REFLECTIONS

By Xrayser

## Whole or Part

Your illustrated article describing a visit to the works of a famous galenical manufacturer (p. 227) poses one or two interesting questions. It is a fact that non-standardised preparations vary from house to house, and many pharmacists have a preference for the product of a particular manufacturer. There is no doubt that the older chemist, from a longer acquaintance with tinctures and infusions, extracts and syrups, acquired a sense which is denied to the more recently qualified. To make that assertion is not to decry the scientific standards of the modern pharmacist. It is merely another way of saying that prescribing habits in general have undergone a change, and the opportunities of making a thorough acquaintance with the whole drug or its preparations are much less frequent. Accurate assay of a galenical is not the public criterion. Such factors as appearance, aroma and effect carry more conviction. To a large extent the older pharmacist based his judgment on the two first-named and found the third discussed with refreshing candour by the customer himself. In buying such galenicals there was exhibited something of the ceremony displayed by the connoisseur of good wine. Over the years certain manufacturing houses built up a reputation for quality and integrity which has been very jealously guarded, and the reputation of many retailers has been enhanced by the good work of such firms, and by the judgment of men who willingly paid a little more for a first-class product. The question of whether the single chemical is as effective as the whole drug is one for the expert to decide. The vitamin has its place, but one feels that the bells of St. Clements would never have extolled the virtues of ascorbic acid.

## A Common Language

Although the Americans and ourselves speak a language which is basically the same, it is a pity, as both you and Mr. T. D. Whittet point out, that there are so many differences in the pharmaceutical field. Confusion is difficult to avoid where the same substance has two different names, and certain difficulties are bound to arise with the growing number of American visitors to these shores. But though the suggestions of your contributor on pp. 229-30 are most useful, it is far from easy to find a distinctive and euphonious solution to the problem of naming a product in such a way as to be easily remembered and at the same time sufficiently descriptive. The excellent survey of the U.S.P. must have involved Mr. Whittet in long hours of study, and readers will be grateful for the comprehensive review of the new work. There is further indication of the flood of new remedies which have naturally evolved in the antibiotic age, though one is struck by the apparent contradiction of the "wide-spectrum" aspect of the antibiotics in contrast with the single chemical with a specific therapeutic purpose.

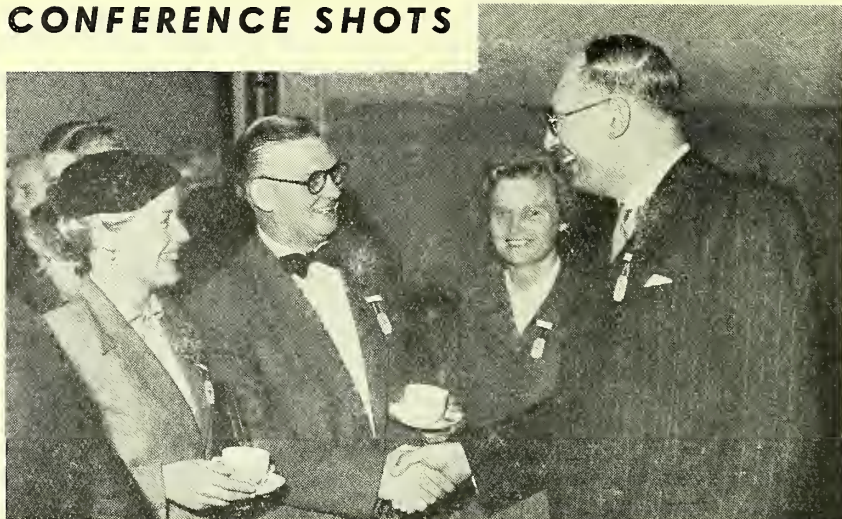
## Metric Dosage

The fifteenth edition of the U.S.P., like the B.P. of 1953, makes use of English titles for the monographs and uses the metric system throughout, even in dosage, and Mr. T. D. Whittet reminds us that the B.P. of 1963 will follow that practice. It is nearly sixty years since the B.P. made its first attempt to convert us to the metric system, by the judicious introduction of both that system and the Apothecaries', side by side. Habit and tradition die hard, and the modern young doctor learns from an older one, who in turn learned from a still older one, and there is no sign yet of a complete break. It is, however, a little inconsistent to find both systems in use in one prescription, where the newer drugs are prescribed in metric quantities and the older in the Apothecaries'. But more is involved than a table of weights and measures, as for example, bottles and containers. It would be interesting to learn the reaction of manufacturers of those to the possible change since a considerable amount of re-tooling would no doubt be necessary.

## CONFERENCE SHOTS



Mrs. McNabb, wife of Mr. W. McNabb, M.P.S.N.I., Lurgan, Northern Ireland, receives a sprig of heather from Mr. H. J. Fraser, Aberdeen.



Mrs. and Dr. J. G. Dare, Leeds, renew acquaintance over afternoon tea on Monday with Mrs. and Mr. T. D. Whittet, London.



The treasurer of the Conference Executive (Mr. H. Treves-Brown) in conversation with Mr. G. E. Vale, Oxford.



A quartet of scientists: Mr. D. M. Gore, Dorking; Dr. H. S. Bean, London; Mr. S. G. E. Stevens, Croydon; and Dr. William Mitchell, London. Dr. Mitchell is a past-chairman of the Fine Chemicals Group, Society of Chemical Industry.



A distinguished visitor from Egypt: Dr. Ibrahim Ragab Fahmy, professor of pharmacognosy at the University of Cairo, with his daughter-in-law.



An intimate scene: Last-minute titrations in the ladies' powder room at the Music Hall, Aberdeen. The room was arranged by the ladies' committee, using cosmetics supplied by manufacturers.

EARLY PICTURES  
BY A. C. & D.  
PHOTOGRAPHER



**THE PLATFORM PARTY AT THE OPENING SESSION.**—Front row: Messrs. G. L. Dickie (secretary, local committee), H. Treves-Brown (Conference treasurer), and W. T. Elder, Lord Provost G. Stephen, Mr. H. Steinman (president of the Pharmaceutical Society), Professor J. P. Todd (Conference chairman), Mr. H. G. Rolfe and Dr. E. F. Hersant (Conference general secretaries).



Sir Hugh and Lady Linstead are received by Principal Sir T. M. and Lady Taylor at the University reception. At right is Professor Sir David Campbell, Aberdeen University.

Telegraphed picture (by arrangement with Aberdeen Journals, Ltd.).



Mr. H. W. Gamble (a former president of the Pharmaceutical Society of Northern Ireland) and Mrs. Gamble are received by the principal and Lady Taylor.

Telegraphed picture (by arrangement with Aberdeen Journals, Ltd.).



**FROM NORTHERN IRELAND.**—Front row: Mr. and Mrs. J. McGregor, Mr. J. Irwin, Mrs. Gordon-Rattie, Mr. W. P. Ewart (president), Mrs. Gamble, Mr. W. H. Boyd, and Mrs. Campbell. Middle row: Mr. H. W. Gamble, Mr. W. Hall, Mrs. Irwin, Mrs. Moffett, Mrs. Giff, Mrs. McNabb, Mr. W. McNabb, Miss Abernethy and Mr. J. Brown. Back row: Messrs. W. Gorman, P. R. W. Shinner, W. Moffett, H. A. Keys, Dr. J. P. Giff, Messrs. W. McIlhagger, C. Gordon-Rattie and S. E. Campbell.

## LEGAL REPORTS

### Pharmacy Act Fine

PROCEEDINGS brought against Ernest Harrison Read, 134 South Street, Ponders End, Middlesex, on August 29, in respect of an unlawful sale and storage of poison, started because a County Council officer saw a tin of nicotine wash in Mr. Read's shop window. "The one in the window was a dummy," explained Mr. Read at Enfield magistrates' court. He pleaded guilty to five summonses: for selling nicotine on premises not registered or listed for the sale of poisons; selling the nicotine in a tin not labelled with the name of the seller and the address of the premises; storing liquid nicotine not in a place reserved solely for the purpose, to which customers had no access; selling it without making or causing to be made an entry in the prescribed book; and selling it to a person neither certified in writing nor known as a person to whom poison could properly be sold. The prosecuting solicitor said that Read had been on the County Council's list for seven years, but had allowed the listing to lapse early in 1955. On June 16 a test purchase was made. The tin was served from a shelf in the shop by the defendant's wife. When seen by the officer she told him she knew the premises were not registered, but she said all the stock was in the process of being transferred to a shop managed by a son in the same road. At the moment of sale she had forgotten that the premises were not listed. In court, Mr. Read said the tins were on the shelf waiting to be moved into the other shop. He was not there at the time, and his wife was serving because the girl assistant was on holiday. He was fined £2 on each of the five summonses, and ordered to pay £4 4s. costs.

### Dangerous Drug Irregularities

ADMITTING that he had been cured of a previous addiction to morphine but was now addicted to pethidine, Dr. C. Spencer Whitehouse, 227b Hagley Road, Edgbaston, Birmingham, pleaded guilty at Birmingham court on August 23, to five charges of obtaining pethidine otherwise than in accordance with the provisions of the Dangerous Drugs Regulations; and to five charges of obtaining the drug by falsely pretending that he required it for the treatment of patients. He also pleaded guilty to eighteen summonses in similar terms and asked that sixteen further similar cases should be taken into consideration. The prosecution urged that, while sympathy must be extended to a drug addict, there had been "a most flagrant flouting of the law" in the cases before the court. Dr. Whitehouse was a registered medical practitioner in Handsworth New Road and so was authorised under the National Health Service to issue prescriptions for the treatment of patients. He had issued a number of prescriptions for the supply of dangerous drugs, suggesting that the drugs were to be used by patients. They were in fact used by himself. The doctor was seen by the police on July 12 and the summonses were issued on July 30.

Dr. Whitehouse continued to obtain the drug, so a warrant was issued and he was arrested.

Since October 29, 1954, 366 prescriptions had been issued by Dr. Whitehouse for pethidine. Of ninety-five checked by the police eighty-five were found to be false. In June 1952, it was stated, Dr. Whitehouse had appeared before the stipendiary magistrate and pleaded guilty to a number of cases of prescribing morphine for himself. He had for those offences been fined £60. Dr. Whitehouse had served in the Royal Army Medical Corps in India in the 1939-45 war; he was discharged from the Army for morphine addiction. He had been treated since in three hospitals and by various doctors. From the last he was discharged in July 1954. The first pethidine prescription was issued just over three months later. A police inspector said that Dr. Whitehouse had quite a large practice, and there had been no complaints from his patients. Doctors who had examined him in Dudley Road Hospital since his arrest advised that he should be admitted to a psychiatric hospital, so that he could be gradually weaned away from pethidine under skilled care. When he was discharged, the prognosis would be better if he did not have access to the drug. Placing Dr. Whitehouse on probation for three years, the deputy stipendiary laid down the condition that he should be a resident patient in a specialist hospital to receive treatment for a year, and that he should not leave it without the sanction of the medical authorities during the year. "If you are guilty of such a breach of the probation order, you will be brought back here and severely dealt with."

## NEW COMPANIES

P.C.—Private Company; R.O.—Registered Office.

**L. DAVIES (CHEMISTS), LTD** (P.C.).—Capital £1,000. To acquire the now carried on at 42 Grange Road, business of a pharmaceutical chemist West Kirby, Ches, as Lewis Davies. Directors: Lewis Davies, M.P.S., Mabel Davies, John L. Davies and Patricia E. Davies.

**IRISH GOODWILL NOVELTIES, LTD.** (P.C.).—Registered in Dublin. Capital £10,000. To carry on the business of chemists, etc. Subscribers: Percy J. Gillespie and Philemon E. B. Thomas, 32 Whitethorn Road, Clonskea, Dublin. The first directors are not named.

**V.B. LINK, LTD.** (P.C.).—Capital £2,000. To carry on the business of manufacturers and sellers of medicinal, pharmaceutical and chemical products, etc. Subscribers: Edward J. Dodman and Charles H. Searle. The first directors are not named. R.O.: 17 Bedford Row, London, W.C.1.

**FARM AGRICULTURAL BOTANICAL PRODUCE, LTD.** (P.C.).—Capital £100. To carry on the business of manufacturers of and dealers in agricultural and botanical products, insecticides, etc. Directors: Arnold E. M. Jansen (director, Fair Laboratories, Ltd.), Roelof Van Ingen and Henry A. Jansen. R.O.: 185 Heath Road, Twickenham, Middlesex.

**SHEPHERD & WALKER, LTD.** (P.C.).—Capital £10,000. To acquire the business of chemists and druggists formerly carried on by William Y. Walker at Market Place, Settle, Yorks. Directors: William T. Walker, M.P.S., Mary T. Walker, William H. Walker, M.P.S., and John S. Walker, M.P.S.

**SURGICAL DRESSINGS, LTD.** (P.C.).—Registered in Dublin. Capital £10,000. To carry on the business of manufacturers of and dealers in orthopaedic and surgical instruments, etc. Subscribers: J. Harold Douglas, Leslie B. Jones, Castlefield, Termonfeckin, co. Louth, Michael Donnelly, and Eugene McMahon, M.P.S.I. The first directors are not named.

## Company News

Previous year's figures in parentheses

**BOOTS PURE DRUG CO., LTD.**—An interim dividend of 3 per cent. on the capital as increased by the bonus issue (against 5 per cent. on the old capital). The board state that the reason for the increase is to reduce the disparity between the interim and final dividends, and it must not be assumed to indicate any increase in the total distribution for the complete financial year.

**BEECHAM GROUP, LTD.**—The review of the year's trading to March 31 by the chairman (Lord Dovercourt) states that total home sales of the group's proprietary products amounted to £14,628,953 (£12,164,438) of which foods accounted for about £6 millions (£4.4 millions); proprietary medicines, £4.1 millions (£3.5 millions) and toilet products, £4.5 millions (£4.2 millions). The prices paid by consumers of the company's products in the United Kingdom amounted to £25.3 millions, of which the group received £14.6 millions; the remainder represented purchase tax, 14.4 per cent. of the total; and trade discounts, wholesale and retail, 27.8 per cent. Overseas business expanded and profits rose to £1,237,101 (£984,252). Accounts are as published in the CHEMIST AND DRUGGIST, July 9, p. 35.

## BUSINESS CHANGES

THE telephone number of the London office of Whiteways Cyder Co., Ltd., Whimble, Devon, is Reliance 1151 and not as given in the company's announcement on another page.

E. J. BUTLER, M.P.S., has transferred his pharmacy to 22 Wolverley Road, Bartley Green, Birmingham, 32, from 72 Ledsam Street, Birmingham, 16.

## Appointments

**PARKE, DAVIS & CO., LTD.**, Staines Road, Hounslow, Middlesex, have appointed Mr. J. A. Freeman their deputy manager and Mr. D. R. Ross their assistant general manager.

**EUCRYL, LTD.**, Southampton, have appointed Mr. J. V. Hyde, 12 Pelton Avenue, Belmont, Sutton, Surrey, their London representative. Messrs. H. W. Moyes and H. J. Smith have retired after twenty years' service as representatives for the company in London and the Home Counties.

## MARRIAGES

**CAMERON—CRAWFORD.** — At St. Paul's Church, Milngavie, Glasgow, on August 20, Ronald Milne Cameron, B.Sc., to Margaret Fernie Crawford, B.Sc., F.P.S., Thorndene, Milngavie.

**RANKIN—SPY.** — At St. Columba Church, Helensburgh, Dumbarton, on August 20, William Douglas Rankin, B.Sc., A.R.T.C., 23 The Gardens, Brookman's Park, Hatfield, Herts, to Patricia Elizabeth Carlow Spy, B.Sc., Ph.C., Glenlea, Helensburgh.

## DEATHS

**BAKER.** — At Preston Park, Brighton, on August 27, Mr. R. E. Baker (a director and the senior member of Richard Baker & Co., Ltd.) (kieselguhr, talc, etc.), 7 Laurence Pountney Hill, London, E.C.4.

**DEACON.** — On August 30, Alderman Walter Deacon, C.B.E., J.P., M.Sc., M.P.S., Bridgwater, Somerset. Alderman Deacon, who was in 1953 made an honorary freeman of the borough of Bridgwater, was president of the Pharmaceutical Society, 1939–41. Fuller details of his career will be given next week.



**MILTON.** — On July 15, Mr. Alexander Thomas Milton, 1354 St. Catherine Street, Montreal, Canada. Mr. Milton qualified as a chemist and druggist in 1921.

**STEPHENSON.** — On August 26, Mr. Robert Henry Stephenson, M.P.S., 254 Killinghall Road, Bradford, Yorks, aged seventy-five. Mr. Stephenson was in business in Barkerend Road, Bradford, for thirty-four years.

**STOREY.** — On August 3, Mr. Thomas Storey, Burnley, aged thirty-five. Mr. Storey studied at Bradford Technical College and qualified as a chemist and druggist in 1940. He had served as an assistant in retail pharmacies at Blackburn, Stacksteads and Darwen, and was a past vice-chairman of the Burnley Branch of the Society.

**THOMAS.** — At the West London Hospital, on August 30, after a long illness, Mr. David Idwal Thomas, sales director of Vitamins, Ltd. Mr. Thomas had been connected with the company's product, Bemax, since its inception.

## PERSONALITY

**MR. J. B. McDONALD,** Hawthornlea, Wellshill Terrace, Perth, who celebrated his golden wedding on August 16, qualified as a chemist and druggist in 1901. He was a member of Perth council for three years, was Dean of Guild, and a magistrate of the city. He is a former president of Perthshire Pharmacists' Association, Dundee and East of Scotland Pharmacists' Association, and was for some years a member of the (then) North British executive of the Pharmaceutical Society.

## TRADE NOTES

**Phenindamine Brand-name.** — The branded product corresponding to the United States Pharmacopoeia antihistamine compound phenindamine (see C. & D., August 27, p. 229) is Thephorin (Roche Products, Ltd., Welwyn Garden City) and not as previously stated.

**Discontinued.** — Glaxo Laboratories, Ltd., Greenford, Middlesex, have discontinued the issue of 10-microgm. tablets of Cytacron in 50's and 500's and of the six 1-c.c. ampoules pack of Cytamen 20.

**Change of Proprietorship.** — Lemskin lemon hand jelly is now manufactured and sold by E. Griffiths Hughes, Ltd., Manchester, who have purchased all the rights in the product from the previous owners. A new pack is shortly becoming available.

**Again Freely Available.** — John Wyeth & Brother, Ltd., Euston Road, N.W.1, announce that Thiomerin sodium is again freely available from all wholesalers in the United Kingdom. Propaganda to general practitioners and hospitals has recommenced.

**An Additional Size.** — Sharp & Dohme, Ltd., Hoddesdon, Herts, announce the introduction of Penbenemid-250 tablets, each containing 250,000 units potassium penicillin G, with 0.25 gm. Benemid (probenecid). The tablets are coloured pale green and issued in bottles of twelve.

**Correction to Advertisement.** — Reckitt & Colman, Ltd., Hull, state that an incorrect price appeared in their advertisement for Codis tablets in the August 20 issue of this paper. The price of the dispensing pack (300 tablets in distinctive gold foils of six tablets each) is correctly 15s.

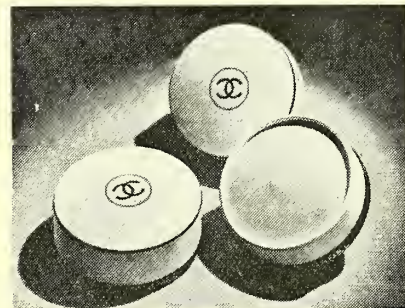
**A Contribution to Hygiene.** — The new nylon stopper and improved plastic pouring lip fitted on Acme Vacuum flasks can be boiled and sterilised. The tight-fitting neck seal prevents seeping into the canister. The makers are Acme Vacuum Flask Co., Ltd., 119 Finsbury Pavement, London, E.C.2.

**Alpha Tocopherol Succinate.** — The Bioglan Laboratories Ltd., Hertford, Herts, point out that the natural vitamin E of today comprises a concentrate distilled from the oils of cottonseed, palm, soya bean, etc. Natural alpha tocopherol succinate, in tablets containing 50 or 200 international units of vitamin E is now available. It is of special value in veterinary practice.

**At Copenhagen Fair.** — Ten of the twelve divisions of the Imperial Chemical Industries, Ltd., are exhibiting at the British Trade Fair, Copenhagen,

September 29 to October 16. In addition the company's synthetic fibres Terylene and Ardil are being displayed. A panel allotted to pharmaceuticals includes Paludrine and Mysoline, penicillin and Sulphamezathine. There is a small section of veterinary specialities.

**Package Redesign.** — Parfums Chanel, Ltd., 2 Old Bond Street, London, W.1, have redressed their face powder in a



new round box as illustrated. The pack is in the white and black associated with Chanel packs. The powder has the same delicate perfume as hitherto and is available in eight shades.

**Now Tax-free.** — Caswell & Pickup, Ltd., manufacturing chemists, 19 Broadway Parade, Coldharbour Lane, Hayes, Middlesex, state that following negotiations with H.M. Customs and Excise, the following items are now accepted as dispensing packs, and as such may be supplied free of purchase tax: 20-oz. Capenal nasal drops, 80-oz. Pirubin infants' cough mixture; 80-oz. Caprex sodium propionate gargle, 300 Solcode soluble codeine tablets.

**Caps for Channel Swimmers.** — W. W. Haffenden, Ltd., Sandwich, Kent, supplied one of their Trident swimming caps to each of the ladies competing in the recent international Channel swimming race organised by Butlins, Ltd. During the training period at Folkestone, Kent, each girl tried the cap, and a representative of the company was present to discuss any modifications necessary, but each swimmer chose a standard model. They showed enthusiasm for the light weight of the cap, for the earpieces that covered without exerting pressure, and for the series of minute suction caps which ensure that the cap fits tightly round the head. A suggestion made by the trainers that the top of the cap should be painted with luminous paint, so that the swimmers could be easily seen from the pilot



**SUMMER SALES CONFERENCE:** Home sales force of Ortho Pharmaceutical, Ltd., Lane End, High Wycombe, Bucks, photographed during the company's recent sales conference.

boat during the hours of darkness, was incorporated.

**Sales Competition Prizewinner.**—An internal sales competition for Modess Masslin, recently held by the personal products division of Johnson & Johnson (Great Britain), Ltd., Slough, was won by Mrs. Lucas, who for the past three years has represented the division in the south-western counties of England. As her prize Mrs. Lucas and her husband are having in September a free fortnight's luxury holiday at Ostend, Belgium.

#### Bonus Offer

FASSETT & JOHNSON, LTD., 86 Clerkenwell Road, London, E.C.1. Nestle Colortint display outer of three doz. assorted shades for price of thirty-three units. Until November 30. [Corrected note.]

#### Christmas Showrooms

CUSSONS, SONS & CO., LTD., Kersal Vale, Manchester, 7. The company state that, because of circumstances outside their control, the date of their showroom at Southampton has had to be changed. It will now be:—

SOUTHAMPTON, Royal Hotel, September 26–29.

## NEW PRODUCTS AND PACKS

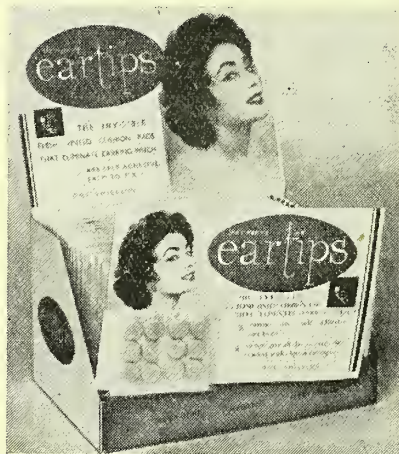
**Reserpine Tablets.**—Biorex Laboratories, Ltd., 47 Exmouth Street, London, E.C.1, have placed on the market a new speciality, Bioreserpine tablets, containing 0.25 mgm. reserpine in each.

**New Lipstick Shade.**—Luft-Tangee (London), Ltd., 329 High Holborn, W.C.1, are marketing through their distributors in Great Britain, J. C. Gambles & Co., Ltd., 209 Blackfriars Road, London, S.E.1, Tangee lipstick in a new shade: Bright'n clear, a "true brilliant red that stays vivid and vibrant even after blotting!"

**Veterinary Suspension of Barium.**—A special veterinary pack of Fotogel barium-sulphate suspension is now available from the manufacturers, Evans Medical Supplies, Ltd., Speke, Liverpool, 19. The pack is a plastic container with a strengthened delivery nozzle containing 225 mills. It has been designed for easy administration for x-ray diagnosis in small animals.

**Perfume in Creamy Base.**—Coty (England), Ltd., 3 Stratford Place, London, W.1, have introduced a new speciality: creamy skin perfume—"a full-bodied perfume captured and held in a creamy base that spreads like a satiny lotion." The product coats the entire skin surface "with an intangible, invisible silky finish of perfume that mysteriously intensifies as it is worn." In l'Aimant, l'Origan, Chypre, Paris, Muguet des Bois and Emeraude fragrances, and issued in a ½-oz flacon, it becomes available to the public on September 20.

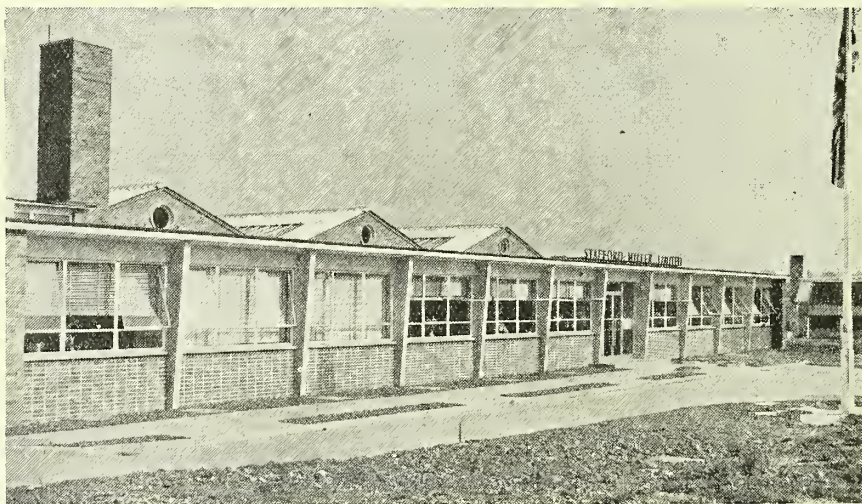
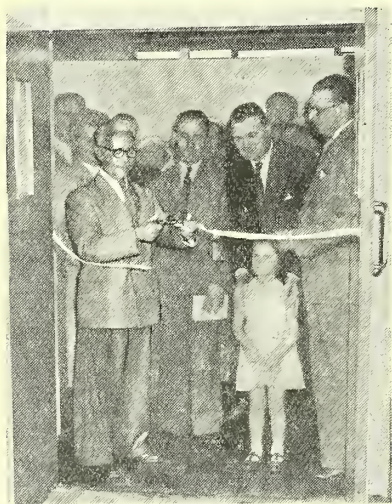
**Pads to Take the Pinch.**—"Eartips"—tiny foam rubber pads with adhesive backs designed to "take the pinch"



from clip-on ear-rings, are marketed by Belton Products, Amwell House, Hoddesdon, Herts. Presented on a strip of gauze, the eartips are kept clean and fresh-looking by being packed in a neat, transparent bag containing six pairs and bag mounted on card for display. A counter dispenser-cum-display piece supplied to retailers measures 6 x 4 in. and an illustration of it is given above. Supplies of the new product are stated to be obtainable through wholesalers.

## A NEW FACTORY AT HATFIELD

### Ceremonial opening



A NEW factory for Stafford-Miller, Ltd., at 166 Great North Road, Hatfield, Herts, was officially opened on August 24. A tape at the entrance was severed by Mr. D. J. Coughlan (a director of the company), and at a celebration luncheon Mr. Eric Field proposed a toast to the company's success. He said he remembered the day when Mr. Coughlan had come to Britain and

started a tiny factory in Red Lion Street, London. By 1939 the business had outgrown the productive capacity of that little plant, and had found modern premises at Welwyn Garden City, with as they then thought, ample opportunities for extension. The war over, it was obvious that a further and much more important development was called for. The introduction of Amm-i-

dent ammoniated dentifrice and the extraordinary welcome it received from the British dental profession, added to the urgency of the need. Of the 14,000 dentists in Great Britain, more than 10,000 asked for testing samples. At the new site they had a factory built specially to fulfil the requirements of a modern, up-to-date pharmaceutical business, with ample scope for research.

# CHEMISTS' CRICKET: Birmingham beat Portsmouth in exciting match

BELIEVED to be the first of its kind, the cricket match between Portsmouth and District Chemists' Cricket Club and Birmingham Pharmaceutical Association cricket section at Merton College, Oxford, sports ground, on August 21 proved an exciting innovation. Match conditions were excellent, and team captains K. G. Cross (Birmingham) and A. W. Dempsey (Portsmouth) agreed to include an extra player in each team. Portsmouth won the toss and elected to bat. The opening partnership between L. E. Page and A. G. Tatford was soon broken when Tatford was bowled by K. G. Norton for one, with only three runs on the board. Youthful Alan Bloxham, next in, scored the first boundary of the match. The second-wicket partnership put

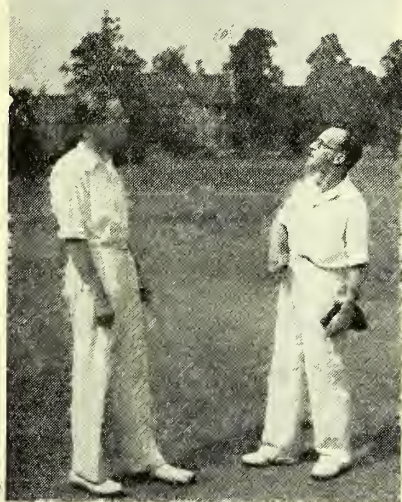
**THE TEAMS:** Top, Portsmouth. Front row: L. E. Page, J. E. F. Faass, A. W. Dempsey (captain), A. G. Tatford, R. V. Gormin; back row: G. Page, B. F. Boniface, G. H. Howse, F. S. V. Moth, P. J. Watson, A. G. Bloxham, L. J. Godwin.

Bottom, Birmingham. Front row: L. Taylor, C. Preston; second row: F. Wilcox, B. C. Norton, K. G. Cross (captain), L. L. James, F. Wale; back row: W. H. Roden (cricket section president); C. K. Bowdler (scorer), D. G. Beck (Birmingham Pharmaceutical Association president), C. A. Brown, A. G. Tovey, G. J. Wetton, A. H. Moseley (umpire), E. Bakewell, W. E. Tracey, W. Pickering (scorer), D. J. Crawford (cricket section chairman).

His was the fifth wicket to fall, and Birmingham could have felt nothing but relief for his dismissal. Other leading scorers for Portsmouth were G. H. Howse (twenty-two) and L. J. Godwin (twenty-eight). The last five Portsmouth wickets fell for the addition of only thirty-two runs, and the team's total (including eleven extras) was 139. Throughout the innings the Birmingham fielding had been on the weak side in all departments.

How different the fielding of Portsmouth proved to be! Birmingham's opening pair, F. Wilcox and W. E. Tracey, were soon separated. Tracey was caught by wicket-keeper B. F. Boniface without scoring. And the bowler? Bloxham! He dismissed Tracey with the fifth ball of his opening over. Faass was also bowling a good pace, and the Birmingham team were forced to sneak runs at every opportunity. Nevertheless their total crept up. Opening bat F. Wilcox scored a useful twenty before he was caught by Wilcox off Howse. A change of bowling saw James dismissed—clean bowled off the fifth ball of Page's first over. The scorebook at this juncture read four for seventy-seven. Without addition, Wale was dismissed on the last ball of Page's over. Birmingham, at this stage, were poorly placed and battling against time. Realising the situation, E. Bakewell hit out to score a quick and sterling thirty before being bowled by a full toss from A. W. Dempsey. Shortly afterwards B. C. Norton returned to the pavilion—brilliantly caught by Howse off Page. Tension was now mounting rapidly. Birmingham still needed thirty runs to win—and the light was failing. A. G. Tovey and captain K. G. Cross were together. Tovey hit a quick fourteen before falling l.b.w. to Page, with the

score at 110. In came tenth man G. J. Wetton, who opened his scoring account with two boundaries in succession. Rapidly the score, and the excitement, mounted. Another boundary by Wetton brought the score to 133. Then with a single Wetton brought the scores level. Portsmouth's captain took over the bowling to the opposing captain Cross, to whom fell the honour of hitting the winning single, giving Birmingham the victory by three wickets.



Team captains A. W. Dempsey (Portsmouth, left), and K. G. Cross (Birmingham) watch the spinning coin. Portsmouth won the toss.

on a further thirty-eight runs before L. E. Page was bowled by James for four. Page had been at the wicket for a total of forty-five minutes. Despite his low score, he had played a useful part, tying down the bowling whilst partner Bloxham brilliantly attacked. Bloxham, only seventeen years of age, had a variety of strokes which approached the classic. He was eventually bowled by Norton with the score at 107. His innings was one of the best features of the match, and his sterling fifty-one runs included six boundaries.

Portsmouth's opening pair, L. E. Page (left) and A. G. Tatford.

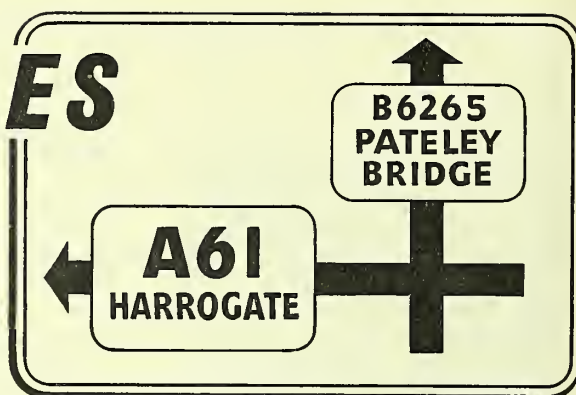


A sound all-rounder in Portsmouth's team was G. H. Howse, seen here strapping on his pads.

# THIRTEEN MILES

BUT FIVE TIMES AS  
MANY YEARS

# APART . . . .



## Two Yorkshire pharmacies with little in common but their ownership

**N**OWHERE in Britain, surely, is there a greater contrast in two pharmacies under one ownership than between the Harrogate and Pateley Bridge shops of Frank Pepper, Ltd. The one is fully up to date in layout, display and stock; the other carried on deliberately in ways familiar to its customers for generations.

The pharmacy at Leeds Road, Harrogate, is new. It con-

tinues, in premises remodelled and occupied only in April, a business established next-door-but-one eighteen years ago. The building is, or was, a detached house built in about the year 1880. The upstairs rooms are little changed, at present, apart from the addition of shelves for conversion into stockrooms, though a certain amount of reconstruction is planned to convert some of them into a showroom for surgical goods, a fitting room, an office, etc.

On the ground floor practically nothing remains as it was. The whole of the front has been converted into backless windows on either side of a central door. By contrast with, yet in proportion to, the windows, each of which is entire, the door is divided into small rectangular panels of bevelled glass. Looking through the windows one sees the whole of the shop above and beside a glass showcase containing and surmounted by a display of goods—medicinal in the right-hand window, and cosmetic in the left. The view is of a large open area (overall depth 22 ft.), with staircase facing the door; L-shaped drug counter running to the right from the stairs and forward towards the window; dispensing department at the left-hand rear corner; and toilet and photographic departments between dispensary and window, and having their own smaller L-shaped counter.

After that quick glance at the interior, the looker-in is tempted to a closer examination of the window. Having noted the goods on display in and on the showcase his eye is attracted to a taller, quadrant-shaped, open-shelved fixture against the side wall, separated from the central display case by a rectangle of white trellis, in front of which stands a flowering plant in pot. The quadrant fixture provides what a Festival of Britain architect might have referred to as a "vertical feature." It seems right and inevitable in its placing yet, like the trellis, was thought of at a relatively late stage, to take off a certain bareness when only the horizontal showcase occupied the window. Each shelf in the quadrant is made a separate display, illuminated at night by a single concealed lamp. Glancing down, the onlooker's eye is met by a ledge of gold Flex-a-glass against the



Exterior of the new pharmacy of Frank Pepper, Ltd., at Leeds Road, Harrogate. At left can be seen part of the old shop.



Clerical work in the dispensary. Through the hatch can be watched everything that takes place on the drug side of the shop.



The drug counter. In the gilt frames above are illuminated solus displays of goods. At left is the goods hatch for delivering goods from the stockrooms.

window, with at intervals along the ledge handsome small shop rounds that once carried their quantum of Ess. Oponox Ess. New Mown Hay, and others familiar to the older generation of pharmacists.

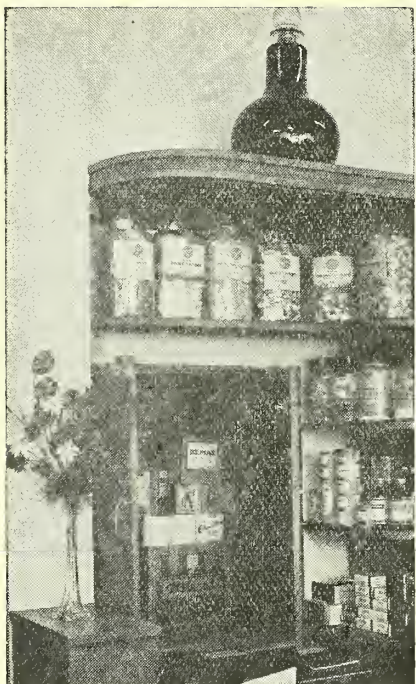
The whole appearance of the shop is an invitation to enter, and not many of those who stop to look at the window fail to go in. If the customer is a housewife buying, say, glucose or having herself weighed she turns to the right-hand counter and rests her shopping basket on a long rack in front of it and supported at the same level. Some



Mr. Pepper with staff of the Leeds Road, Harrogate, shop.



The toilet window with view of toilet stock fittings behind. At left is illuminated quadrant shelving. Next to it are trellis "gate" and basket of flowers.



Left: Goods on lift from stock rooms above; at top of picture is carboy from "Brontë" apothecary's shop at Haworth. Right: Toilet and photographic counters and fixtures. The sliding drawers (left) save much time in identifying shades or fragrances required.



"Self-choice" shelves of baby foods round dispensary hatch.

of the glass-fronted wall cases have been adapted from other fittings, but as the limbs of the "L" are 8 ft. and 10 ft. long respectively the counters themselves accommodate quite a variety of stock. A young housewife may be in need of a tin of strained vegetables for the baby. On her second and subsequent visits she will recall that all the baby foods are together on open shelves outside the dispensary, where it is quite convenient to pick out the product she wants or examine one that she may not have seen previously. The upper shelves were made exactly to take four containers deep and three high in each row; the lower shelves for milk foods three deep and two high.

A purchase of lipstick will take her to the toilet counter, where a showcase fixture of divided drawers enables any item from a comprehensive and varied stock to be brought out at once but almost casually, the assistant being able to identify the shade or perfume from the label on the item as it stands in the drawer (there is no need to turn over stock to look at the label).

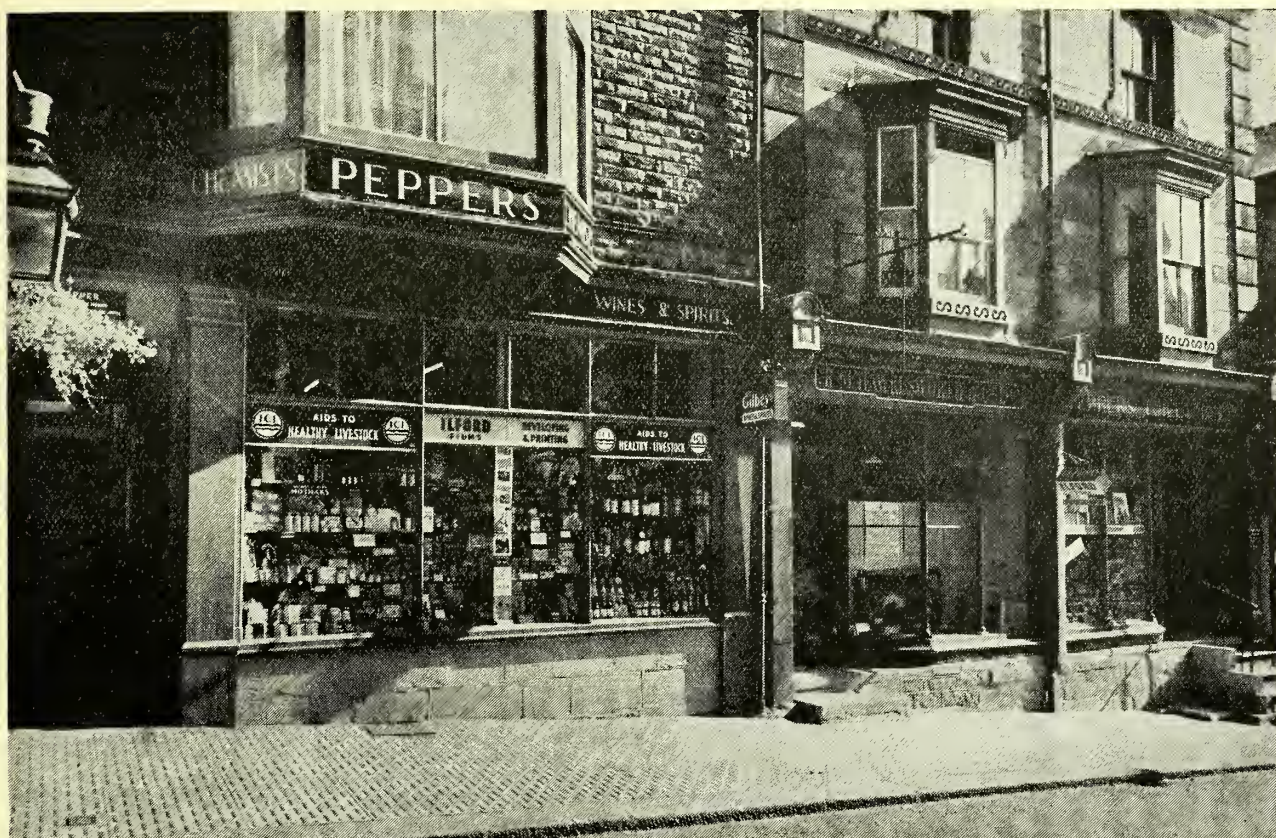
Each wall case is 6 ft. 6 in. high—its top within reaching distance—and in the wall space above each side counter there is let in a rectangular recess behind a gilt frame. The "picture" is a solus display of a single item or the products of a single manufacturer, illuminated, when daylight

fails, by one concealed orange or pink filament light to give soft lighting plus an impression of relief or depth.

The "frames" are omitted from the rear walls. Instead, there is a centrally placed gilt pestle and mortar flanked by carboys of historic interest (for they were once the property of the Haworth apothecary mentioned in one of the books of the Brontë sisters). In the toilet department are two early Victorian biscuitware spirit jars with pewter



The business is essentially of a "family" character.



The Pateley Bridge pharmacy of the company with—next door but one—"Pepper's Toilet Department," formerly a drug store and before that a pharmacy.

taps—"finds" from the shop at Pateley Bridge and used there until so recently as within the past twenty-five years. These all constitute a decorative touch of the past, but otherwise the whole thing is modern—the backless windows, light oak fittings, strip lighting (seldom needed), and perhaps especially the shop clock, a modern square figure-less clock projecting from the wall but so much a part of it that anyone who did not know would say it must have been architect-designed. In fact, it is an assembly by the pharmacy staff from an electric clock unit, a plywood box that once probably contained goods, and black plastic strips.

That completes the list of features that an observant shopper might notice, but some very practical ideas have been embodied in the shop in ways that are not obvious. For example, the central heating is not seen, but there are radiators at strategic points, especially near the open windows, and the pipes joining them are not buried in the wall but set off from it about 1 in., so as to contribute their quota of heat to the shop.

Around the windows there is a channel between the plate glass and the Flex-a-glass shelf already mentioned. If there is any condensation of moisture on the window the water runs down into the channel and on by a hidden sloping shelf to the floor, where it can be mopped up. Fans are placed so as to circulate a current of air along the window glass and back into the shop when misting is a problem.

And there is no step at the shop door—an advantage that took some contriving—and a good deal of concrete in the forecourt (once the house garden)—to secure. But cripples and pram-wheelers have now no difficulty—not even a psychological one—in entering the shop, and a pharmacy, of course, exists in part to serve such people.

So far, the dispensary has been no more than mentioned: it is a subject in itself. There is no direct access to



Interior of the Pateley Bridge pharmacy—all departments except toilet.



Warehouse—formerly bottling store—of the Pateley Bridge pharmacy.

it from the shop. You must pass through a door and turn left through another before you reach it. Yet it seems open to the shop because a hatch about 3 ft. deep and 6 ft. wide shows the dispensers at work beyond and brings the customer in contact with them when he collects his medicine. Where "mushroom" has been chosen as colour for the shop walls and "Hopton stone" colour for any painted woodwork, the dispensary walls are of coral pink, and the counters of red Formica. The stair treads and risers and chair seats match the Formica in colour.

### Dispensary

The dispensary is as orderly as it is roomy. The drug bottles are in uniformly labelled rows according to size. The small sink is equipped with an upward water jet for cleaning measures; it is not used for any other purpose, all bottles being washed in the boiler room. The National Formulary has its own "tailor-made" sloped shelf at eye level, and two persons can work with the most ample elbow room on the working bench. Prescription books, eighteen in number, rubber stamps, etc., are at the right. Clerical work is done at a desk on the hatch side.

The open dispensary hatch has a two-way effect. The customer looks in but the pharmacist in the dispensary sees and can supervise all that goes on in the shop, at least so far as its drug side is concerned.

The dispensary is a most cheerful, light and airy place to work in and not surprisingly it has become a meeting place for the local doctors, of whom, to judge by a pasted-up list of telephone numbers, there are an extraordinarily large number in that part of Harrogate.

Before leaving the shop for a last look at the outside, we must mention the Sheraton grandfather clock on the stairs landing, because it is something that every customer, and especially every young customer, hears with delight. Westminster and Whittington chimes alternate, and the clock face is of silver and gilt.

Goods are delivered at the back door of the premises and taken into a boiler and all-purpose room from which they go up by goods lift to the stockrooms above. The lift, open at the back, also opens into the shop through hatch doors, and the shop shelves are replenished with stock put on the lift upstairs and unloaded through the hatch at shop level.

The shop front is in two shades of grey, with solid wood letters painted pillar-box red mounted on the fascia. There is a sub-facia of fluted asbestos similarly painted, but no sunblind. To overcome fading of goods, and discomfort in the shop on hot sunny days, transparent yellow plastic "blinds" are let down inside the windows, preventing fading. In a last glance at the window the visitor's eye may be

attracted to the tiles below it. Square and unglazed, they are of a kind claimed to stand heat and cold, rain and frost. In planning the front, the designer's aim was to achieve a style that was contemporary yet a good neighbour to other shops—some traditional, some modern—in the row in which it stands. The business is of a friendly, family type in a good-class residential area, and the fine old tree that once graced the garden still stands, rising now from the concrete, symbolising the intention that the pharmacy shall fit naturally and permanently into the local scheme of things.

Taking leave of modern, urban Harrogate, let us now embark on a thirteen-mile trip by road through the engaging Nidderdale countryside to the small agricultural and quarrying town of Pateley Bridge—centre, most strangely, of a flax and hemp milling industry. Here, in the short High Street, is the company's branch establishment, a pharmacy in quite another mould.

### A "Calling" Ground

Its 23-ft. frontage to the street is taken up with windows tightly dressed with sheep dips, cattle remedies, popular medicines and even wines and spirits. The entrance doorway is on the return, in a side-way that ends in a warehouse. The inside of the shop is small. Half a dozen customers make it seem crowded, yet it is a "calling" (pronounced kal-ing) ground—a Yorkshire expression only translatable in a longer phrase such as "gathering-place for gossip"—for the neighbourhood. There is an L-shaped counter behind whose shorter limb is a minute dispensary, also a door into stock rooms behind.

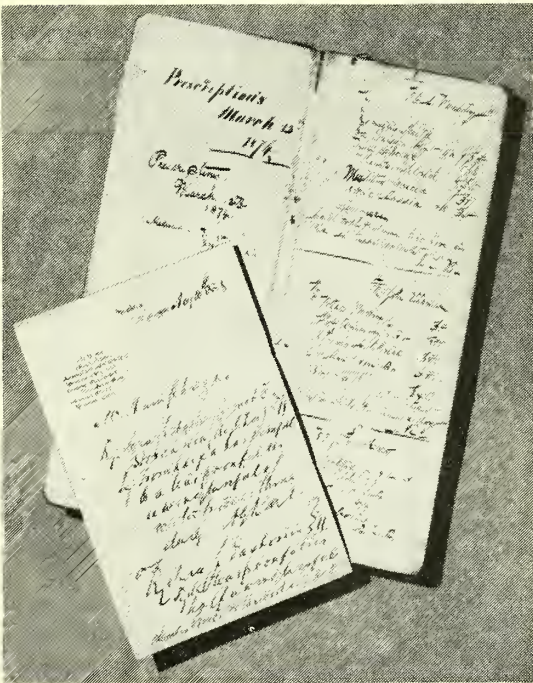
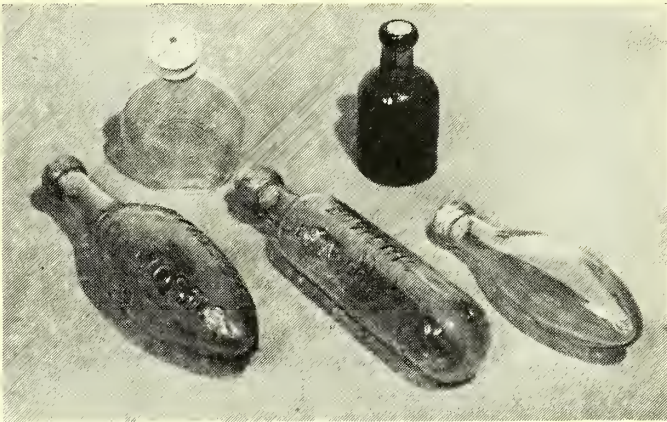
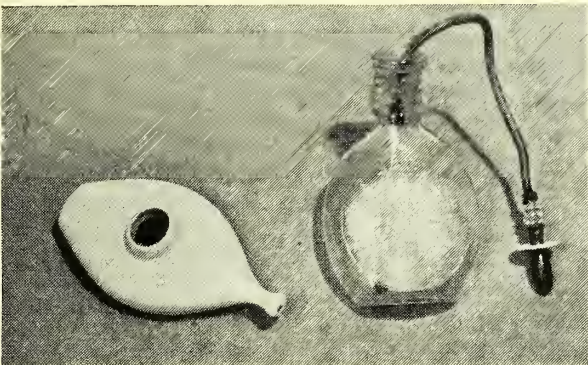
Here is no streamlined modern shop, nor any wish or plan to make it so. The staff share strongly the belief that their customers, almost all of whom they know well, would resent any radical change in the appearance of the shop. So the showcases and the counters and displays of goods—even a large proportion of the goods themselves—are much as they were fifty, sixty, seventy years ago.

Indeed, when Mr. Frank Pepper or, strictly, the company, acquired the business six years ago there were still in stock on the shelves the rubber-tubed infant feeding bottles and the brass enema stamped "Maw, Aldermanbury" illustrated below and on p. 253. They were, it is true, taken out of stock, and so were the two pewter bedpans that are to be seen hanging on the wall.

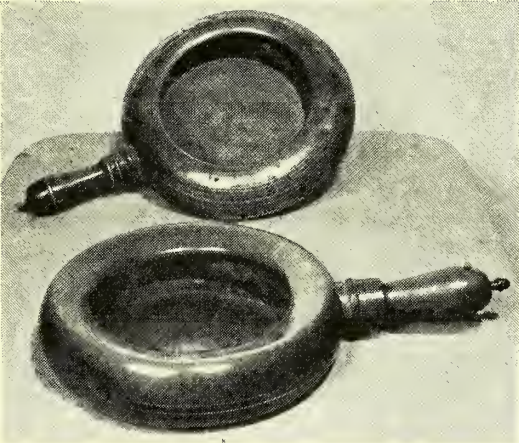
The bedpans today are for decoration only, or more accurately for romantic interest, and of that commodity



Enema outfit that was found still in stock (formerly it was let out on hire) at Pateley Bridge six years ago.



Top left: Invalid and infant feeding bottles in stock at the Pateley Bridge pharmacy until six years ago. Top right: Mineral-water and other bottles from the warehouse. Centre left: Appliances, probably tongue scrapers. Bottom left: Pewter bedpans in possession of the business. Bottom right: First prescription book (A.D. 1874) and an 1888 prescription of a Harrogate doctor—proof, even in the miniature illustration, that some doctors can, or could in those days, write legibly.



there is in this business more than an average amount. The business began in 1889 as a bottling store for beers and wines and mineral waters, and remained so for about twenty years. It still is the town's only off-licence. It took on a pharmaceutical aspect fortuitously, from the recruitment a year or two later of a chemist and druggist on to the staff. Since those days the pharmacy has waxed and the licensed trade waned.

At one period the pharmacy had to face probable new and strong opposition when its competitor, ten yards away, failed. The problem was eventually solved by an outright purchase, but the fear of competition remained, and both shops continued to be run, the second not as a pharmacy but as a drug store. Presumably the policy was worth while, or one would have been closed. Yet why, among customers in this town of 7,000 people, should some prefer to buy their drugs at one, some at the other, shop? Politics? Religion? Teetotallers versus drinkers?

Pigot's 1829 National Commercial Directory of England and Wales gives under "Pateley Bridge shopkeepers and traders"

Jno. Richardson  
Nancy Gross

}

Chymists and druggists

One of the two would be the occupier of the premises. After a gap a Mr. Constantine, chymist and druggist, was in possession and, from 1884 to 1931, Mr. Lockwood. He sold to Mr. Stockdale, who failed. Mrs. Verity, wife of the

"top shop" chemist, took it over and ran it as the Nidderdale Drug Stores. It was so named when Messrs. Pepper acquired it.

Under the present proprietors the anomaly was rationalised: The next-door-but-one shop was converted into "Pepper's Toilet Department," concentrating on cosmetics and fancy goods. The second set of premises has also had its chequered history. Part of the building was once occupied at the back by a maker of silk hats (whether for local purchase or for export is a matter for speculation), while simultaneously the four floors of the premises at the front were occupied by a hairdresser (basement); the pharmacy; a dental surgery; and (top floor) stockrooms.

### A Slow Pace of Change

The character of the town, as of most other places, is slowly changing under the influence of the internal-combustion engine. The railway is today used only once a week and not at all for passengers, but more tourists come each year and business men from an ever-widening area can make Pateley Bridge their dormitory town. All the same the core of *clientèle* remains a local folk tenacious of its established way of life. Many, many years are likely to pass before the flavour and character of Pepper's Pateley Bridge pharmacy are substantially altered. Meanwhile, the two shops of the company will continue to show their sharp, their almost incongruous contrasts.

## TRADE MARKS

### APPLICATIONS ADVERTISED BEFORE REGISTRATION

From the "Trade Marks Journal," August 17

For chemical products used in industry, science, photography; chemical products used in agriculture, horticulture, forestry; manures (natural and artificial); chemical substances for preserving food-stuffs (1)

BORESTER, 740,487, by Borax Consolidated, Ltd., London, E.C.4.

For chemical preparations for use in the clarification of beverages and fruit juices (1)

PECTINEXA, 735,980, by Schweizerische Ferment, A.G., Basle, Switzerland.

For adhesives for use in industry (1)

UNIGRIP, 742,487, by British United Shoe Machinery Co., Ltd., Leicester.

From the "Trade Marks Journal," August 24

For chemical substances, being esters, for use as antioxidants and preservatives in pharmaceutical and medical preparations, in animal oils, in essential oils, in soaps and perfumes, in cosmetics and in foodstuffs (1)

NIPASOL, B640,072, by Nipa Laboratories, Ltd., London, E.C.3.

For chemical substances used in industry (1)

ALKADON, 718,343, MEMBRANOL, 718,345, by Farbenfabriken Bayer, A.G., Leverkusen, Germany. PRODIMEX, 742,203, PRODIMEXOL, 742,204, by Doittau Produits Metalurgie, Corbell, France.

For all goods (1)

FERRACLERE, 739,411, by Pure Chemicals, Ltd., London, E.C.4.

For artificial sweetening substances in tablet form consisting of saccharin and vitamin B (1)

BISKOIDS, 742,145, CRYSTOIDS, 742,146, by Andomia Products, Ltd., Bradford, Yorks.

For non-medicated toilet preparations (3)

AEROTAN, 736,787, by La Publicité Scientifique, S.A., Geneva, Switzerland. MORNING GLORY, B740,462, by Bostwick Laboratories, Ltd., London, W.1. GLEDAL, 741,888, by J. Waterhouse & Co., Ltd., also trading as Single, Dalby & Co., Ashton-under-Lyne. REVLON—non smear, 742,519, by Revlon Products Corporation, New York, U.S.A.

For abrasive soap pastes for use in industry (3)

SOLVO, 741,479, by W. C. Evans & Co. (Eccles), Ltd., Manchester.

For cleaning and laundry preparations, not including soap (3)

AQUATEX, 742,398, by Achille Serre, Ltd., London, E.17.

For stain-removing products (3)

SERILLO, 742,466, by Kores Manufacturing Co., Ltd., London, N.16.

For all goods (5)

LAPEX, 731,830, by Laporte Chemicals, Ltd., London, W.1. INTERNATIO, 740,539, by N.V. Internationale Crediet en Handels-Vereeniging "Rotterdam," Rotterdam, Holland. TONAJADE, 741,125, ZESTADE, B741,126, by the International Import and Export Corporation, Ltd., Nassau, Bahamas. PACATAL, 742,459, by William R. Warner & Co., Ltd., London, W.4. BUTORIL, 742,903, by the Wellcome Foundation, Ltd., London, W.1.

For all goods but not including dietetic food-stuffs (5)

DOLEDON, 736,056, by Roche Products, Ltd., Welwyn Garden City, Herts.

For disinfectants and deodorants (not for personal use) (5)

TEAL, 741,288, TEALS, 741,290, by Petama Polishes, Ltd., Ipswich, Suffolk.

For anaesthetics (5)

MAGNACAINE, 741,779, by Allen & Hanburys, Ltd., London, E.2.

For antibiotic pharmaceutical preparations (5)

NYCOSTATIN, 738,428, by E. R. Squibb & Sons, Ltd., also trading as E. R. Squibb & Sons, London, W.1.

For all goods but not including infants' and invalids' foods or dietetic foods (5)

DEFENSOR, 739,195, by Defensor, A.G., Zurich, Switzerland.

## GUIDE TO NEW MEDICAMENTS

Information about proprietary products supplied principally on prescription. Reprints on perforated gummed paper for affixing to index cards are obtainable.

THE CHEMIST AND DRUGGIST Guide to New Medicaments (September 3, 1955).

### GANTRISIN Eye Ointment

MANUFACTURER: Roche Products, Ltd., 15 Manchester Square, London, W.1.

DESCRIPTION: An ointment containing 4 per cent. sulphafurazole.

INDICATIONS: Infections of the eye caused by sulphonamide-sensitive organisms.

DOSAGE: Ointment to be applied two or three times daily.

HOW SUPPLIED: In 5-gm. tube.

FIRST ISSUED: June 1955.

THE CHEMIST AND DRUGGIST Guide to New Medicaments (September 3, 1955).

### HIBITANE Antiseptic Cream

MANUFACTURER: Imperial Chemical (Pharmaceuticals), Ltd., Fulshaw Hall, Wilmslow, Manchester.

DESCRIPTION: A smooth, water-miscible cream containing 1 per cent. Hibitane (chlorhexidine diacetate).

USE: For lasting disinfection of the hands and to prevent cross infection.

HOW SUPPLIED: In tube of 50 gm. and jar of 500 gm.

FIRST ISSUED: Limited supplies, November 1954. Now freely available.

REFERENCES: *Brit. J. Pharmacol.*, 1954, **9**, 192. *Proc. roy. Soc. Med.*, 1955, **48**, 21. *Brit. med. J.*, 1955, **1**, 81. *Ibid.*, 1955, **1**, 985.

THE CHEMIST AND DRUGGIST Guide to New Medicaments (September 3, 1955).

### HEMATRIX

MANUFACTURER: S. Maw, Son & Sons, Ltd., Aldersgate House, New Barnet, Herts.

DESCRIPTION: An ointment containing benzocaine, 6 per cent.; aluminium oxide, 7.5 per cent.; zinc oxide, 15 per cent.; balsam Peru, 2.5 per cent., in a vehicle consisting of castor oil, 38 per cent., and wool wax, 31 per cent.

INDICATIONS: Haemorrhoids, pruritus ani, and all inflammatory, pruritic, and eczematous lesions of the anus or rectum.

DOSAGE: Applied freely, as necessary.

HOW SUPPLIED: In tube (vulcanite nozzle supplied).

THE CHEMIST AND DRUGGIST Guide to New Medicaments (September 3, 1955).

### NOLUDAR

MANUFACTURER: Roche Products, Ltd., 15 Manchester Square, London, W.1.

DESCRIPTION: A sedative-hypnotic (2, 4-dioxo-3, 3-diethyl-5-methyl-piperidine).

INDICATIONS: Insomnia; nervousness; neurasthenia; anxiety states; cardiac neurosis; and hypertension.

DOSAGE: *Adults*: As a sedative,  $\frac{1}{4}$ – $\frac{1}{2}$  tablet, repeated as necessary; as a hypnotic, 1–2 tablets, fifteen minutes before bedtime. *Children*: Half the adult dose.

HOW SUPPLIED: In containers of ten, 100 and 500 tablets, each containing 200 mgm.

FIRST ISSUED: July 11, 1955.

REFERENCES: *Schweiz. med. Wschr.*, 1955, **85**, 350; *Ibid.*, 355. *Int. Rec. Med.*, 1955, **168**, 52.

THE CHEMIST AND DRUGGIST Guide to New Medicaments (September 3, 1955).

### ANTRENYL Duplex

MANUFACTURER: Ciba Laboratories, Ltd., Horsham, Sussex.

DESCRIPTION: A prolonged-action anticholinergic tablet, containing 10 mgm.

Antrenyl (2-diethylaminoethyl- $\alpha$ -cyclohexyl- $\alpha$ -phenylglycollate methobromide) in two divided doses of 5 mgm., separated by an acid-resisting membrane. The second 5 mgm. comes into effect as the first dose wanes.

INDICATIONS: Pain in peptic ulcer and other conditions associated with hypermotility of the gastro-intestinal tract.

DOSAGE: 1 or 2 tablets night and morning. The interval of taking should not be less than eight hours.

HOW SUPPLIED: In bottles of twenty-five, 100 and 500.

FIRST ISSUED: June 1955.

THE CHEMIST AND DRUGGIST Guide to New Medicaments (September 3, 1955).

**SEOMINAL**

MANUFACTURER: Bayer Products, Ltd., Neville House, Eden Street, Kingston-on-Thames, Surrey.

DESCRIPTION: A hypotensive and sedative tablet containing phenobarbitone (Luminal), gr. 1/6; theobromine, gr. 5; and reserpine, 0.2 mgm.

INDICATIONS: Mild and moderate hypertension.

DOSAGE: Initial dose, 1 tablet two or three times daily; maintenance, 1/2-2 tablets, daily.

HOW SUPPLIED: In bottles of 100 and 500 tablets.

FIRST ISSUED: May 1955.

THE CHEMIST AND DRUGGIST Guide to New Medicaments (September 3, 1955).

**PASTA TITANIUM CUM BIO CETAB**

MANUFACTURER: Biorex Laboratories, Ltd., 47 Exmouth Market, London, E.C.1.

DESCRIPTION: An ointment containing titanium dioxide, 20 per cent.; zinc oxide, 25 per cent.; kaolin, 10 per cent.; Biocetab (cetrimide, B.P.), 0.05 per cent.; base to 100 per cent.

INDICATIONS: Ulcerative varicose veins, phlebitis, varicose-vein dermatitis, and all weeping ulcerative conditions of the extremities.

USE: Applied to the affected parts, three times daily, as instructed by the physician.

HOW SUPPLIED: In 2-oz. and 1-lb. packs.

FIRST ISSUED: May 1955.

THE CHEMIST AND DRUGGIST Guide to New Medicaments (September 3, 1955).

**HIBITANE Powder**

MANUFACTURER: Imperial Chemical (Pharmaceuticals), Ltd., Fulshaw Hall, Wilmslow, Manchester.

DESCRIPTION: An antibacterial agent: chlorhexidine diacetate (bis-*p*-chlorophenyldiguanido-hexane diacetate). It is a white crystalline powder, soluble in water to 1.9 per cent.

USE: For the preparation of pure aqueous solutions and tinctures and for incorporating into creams, ointments, etc. *Pre-operative skin preparation*: 0.5 per cent. solution in 70 per cent. alcohol or 1 per cent. aqueous solution. *Straight antiseptic purposes*: 1 in 5,000 solution. *In dermatology and wounds and burns*: 1 in 2,000 solution.

HOW SUPPLIED: In 10-gm. bottle.

FIRST ISSUED: May 1955.

REFERENCES: *Brit. J. Pharmacol.*, 1954, **9**, 192. *Proc. roy. Soc. Med.*, 1955, **48**, 21. *Brit. med. J.*, 1955, **1**, 81. *Ibid.*, 1955, 985.

THE CHEMIST AND DRUGGIST Guide to New Medicaments (September 3, 1955).

**MESTINON**

MANUFACTURER: Roche Products, Ltd., 15 Manchester Square, London, W.1.

DESCRIPTION: A cholinergic drug: the dimethyl carbamic ester of 1-methyl-3-hydroxy-pyridinium bromide.

INDICATIONS: (a) Myasthenia gravis; (b) delayed menstruation, pregnancy test; (c) spastic paralysis as in rheumatoid arthritis; (d) anaesthesia (antidote to curare-like relaxants).

DOSAGE: (a) 3 to 20 tablets orally, daily, depending on degree and duration of response (may be combined with Prostigmin treatment); (b) 1 to 2 mgm., intramuscularly, daily for three days, unless menstruation occurs meanwhile; (c) 1 to 2 mgm., intramuscularly, or 1 to 6 tablets daily, when required to obtain relaxation; (d) 5 mgm., intravenously, is approximately equivalent to 2.5 mgm. Prostigmin.

HOW SUPPLIED: In packs of twenty-five, 150, 500 tablets of 60 mgm.; six and fifty ampoules (1 mgm. in 1 c.c.); and rubber-capped vial of 5 c.c. of concentrated solution (5 mgm. per c.c.).

FIRST ISSUED: July 4, 1955.

REFERENCES: *New Engl. J. Med.*, 1954, **251**, 271. *J. Amer. med. Ass.*, 1954, **155**, 961. *Schweiz. med. Wschr.*, 1953, **83**, 1190.

Correction to THE CHEMIST AND DRUGGIST Guide to New Medicaments (July 2, 1955).

**PRESFERSUL Tablets**

DESCRIPTION: Prescoted tab. ferr. sulph. co., B.P.C., each containing gr. 3 exsiccated ferrous sulphate.

**PRINT & PUBLICITY****Booklets and Leaflets**

CRODA, LTD., Croda House, Snaith, Goole, Yorks: "Polamine Anionic Type Emulsifier," Pp. 3.

GEIGY PHARMACEUTICAL CO., LTD., Rhodes, Middleton, Manchester: "Eurax Lotion," Pp. 4.

LEON GOODMAN DISPLAYS, LTD., 119 Whitfield Street, London, W.1: "Point-of-Sale Advertising," Pp. 16.

REXALL DRUG CO., LTD., Loughborough, Leics: "Tiny-Tot baby products (broadsheet)."

**Medical Propaganda**

Manufacturers' leaflets, folders, booklets, etc., directed to doctors but available to pharmacists.

ALLEN & HANBURY, LTD., Bethnal Green, London, E.2: "Anxine in Anxiety States," "Sleep to a Time Table" (folders).

BAYER PRODUCTS, LTD., Neville House, Eden Street, Kingston-on-Thames, Surrey: "Seominal for Hypertension" (4-p. folder); "Hypaque in Excretion Urography" (8-p. folder).

CIBA LABORATORIES, LTD., Horsham, Sussex: "Apresoline for Hypertension" (16-p. booklet), and "Serpasil for Hypertension and Anxiety States" (26-p. booklet).

IMPERIAL CHEMICAL (PHARMACEUTICALS), LTD., Fulshaw Hall, Wilmslow, Manchester: "Hibitane Concentrate 2 per cent." (8-p. booklet); "Hibitane Powder," "Hibitane Obstetric Cream," "Hibitane Antiseptic Cream" (6-p. folders).

PHARMACEUTICAL SPECIALITIES (MAY & BAKER), LTD., Dagenham, Essex: "Recent Reports on Largacil" (8-p. booklet).

ROCHE PRODUCTS, LTD., 15 Manchester Square, London, W.1: "Clinical Effects of Mestion" (6-p. folder); "Gantrisin Readily Soluble Sulphonamide" (4-p. folder); "Asterol Tincture" (1-p. leaflet pad of instruction leaflets for patients).

SHARP & DOHME, LTD., Hoddesdon, Herts: "Penbenemid Oral Penicillin" (4-p. folder); "Cadrosan Tablets" (8-p. folder); "Sleep Without Barbiturates" (6-p. folder); "New Penbenemid-250" (6-p. folder); "Penbenemid Suspension and Tablets (dosage card).

S. MAW SON & SONS, Aldersgate House, New Barnet, Herts: "Hematrix for Haemorrhoids" (4-p. folder).

PAINES & BYRNE, LTD., Pabym Laboratories, Greenford, Middlesex: "Proteolised Liver (Pabym)" (file card).

GEIGY PHARMACEUTICAL CO., LTD., Rhodes, Middleton, Manchester: "Eurax for Pruritus" (8-p. leaflet).

**COMING EVENTS**

Items for inclusion under this heading should be sent in time to reach the Editor not later than first post on Wednesday of the week of insertion.

**Monday, September 5**

HULL CHEMISTS' ASSOCIATION and BRANCH, Imperial Hotel, Hull, at 1.30 p.m. Luncheon club.

**Wednesday, September 7**

MANCHESTER PHARMACEUTICAL GOLFING SOCIETY, Wilmslow golf club. Competition for the Imperial Chemical (Pharmaceuticals), Ltd., Avion trophy and prize.

SOUTH LONDON AND SURREY PHARMACISTS' GOLFING SOCIETY, Cuddington golf club, Banstead, at 1.30 p.m. Stableford competition for president's prize. Details from Mr. G. G. Watt, 99 Streatham Vale, London, S.W.16.

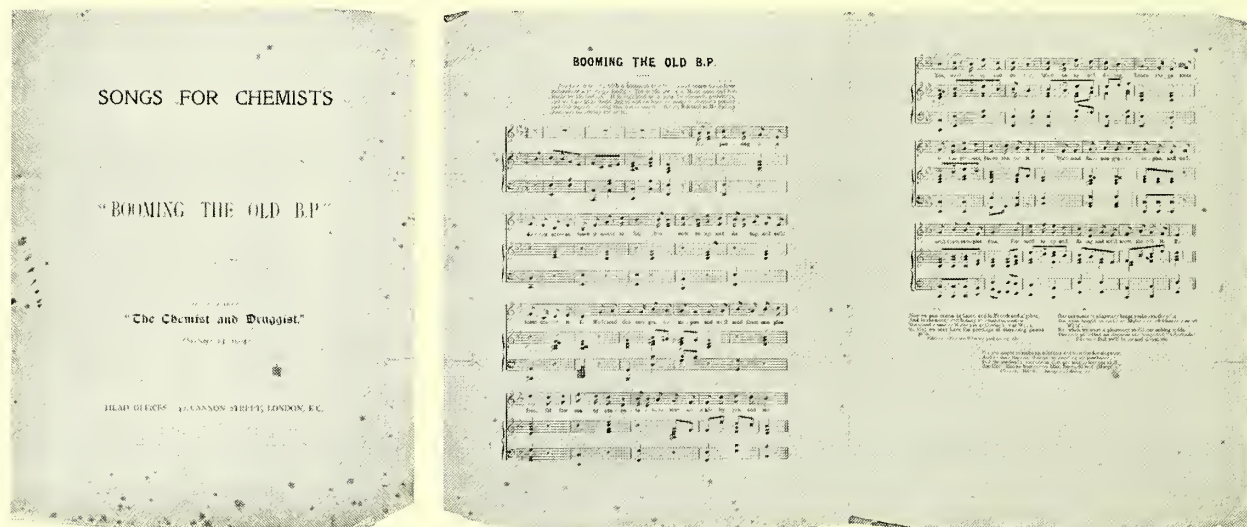
**Thursday, September 8**

NORTH STAFFORDSHIRE BRANCH, PHARMACEUTICAL SOCIETY, Visit to the agricultural experimental station of Boots Pure Drug Co., Ltd., Nottingham, followed by theatre visit, Ticker, 13s. 6d.

FINCHLEY AND DISTRICT DIVISION, NORTH LONDON PHARMACEUTICAL ASSOCIATION, Visit to works and laboratories of Parke, Davis & Co., Ltd., Hounslow.

# Onward from Galen

## A CURRENT CAUSERIE



THAT the C. & D. was once engaged in the music-publishing business had been forgotten by the present editorial staff. Or rather it was unknown until Mr. H. W. Judge, Wakefield, who found the score illustrated above, kindly sent it in. It is gratifying to discover that our predecessors in office did such good work in popularising a volume now so widely acknowledged as authoritative. As the words in the reproduction must tax the eyesight of all whose vision is less than about 400 per cent. of normal we repeat, slightly larger, the words of three of the four stanzas:

Dispensing is a dying art—at least it seems to be,  
But we'll be up and doing, and we'll boom the old B.P.  
We'll send doctors gratis copies, and we'll send them samples free,  
Of the many preparations that are made by you and me.

Now we pass exams, in Latin, and in French and algebra,  
And in chemistry and botany and materia medica,  
We spend a year at Muter's or at Cowley's or at Will's,  
So that we have the privilege of dispensing patent pills.

Our examiner in pharmacy heaps praises on the pills  
We were taught to make at Muter's or at Duncan's or at Will's;  
But when we start a pharmacy to fill our aching voids  
The only pills that we dispense are compound "tablets."

We should be surprised if there were any need to "boom the new B.P.," when that appears, but the idea is one that might appeal to the publishers of the International Pharmacopœia. Would any lyric writers among our readers care to provide the words, or any amateur composer the music?



THE following story is said to be told by the Russians against themselves. At an international meeting of doctors and surgeons, an American, English and Russian surgeon were talking together. The American was asked what he considered to be the greatest advance in surgery in recent years in America. He said he thought it was their work on blue babies, who could now be given fresh blood and grow up into normal children. The Englishman was then asked. He replied "I think the work on separating Siamese twins." Both then turned to the Russian and asked what was the greatest advance in Russia. He replied "I think our work on extracting tonsils." The Englishman and American gasped with surprise. "We have been doing that," they said, "for two hundred years." "Ah, yes, I know," replied the Russian, "but in Russia people are afraid of opening their mouths. It has to be done per rectum and it is a very, very tricky operation."

## TRADE FIGURES FOR JULY

A TABLE of import and export values in the drug, chemical and essential oil classes. Comment, p. 259.

EXPORTS				VALUE
				£
Drugs, medicines, medicinal preparations (total)	...	...	...	2,716,553
Vitamins	...	...	...	271,730
Penicillin salts	...	...	...	106,383
Penicillin injections	...	...	...	65,690
Penicillin tablets, ointments, etc.	...	...	...	35,446
Antibiotics other than penicillin	...	...	...	395,183
Quinine	...	...	...	20,801
Alkaloids, excluding quinine	...	...	...	55,880
Aspirin	...	...	...	45,524
Antihistamines	...	...	...	33,691
Antipaludics	...	...	...	57,920
Barbiturates	...	...	...	45,176
Liver extracts	...	...	...	16,719
Ointments and liniments	...	...	...	101,160
Insulin	...	...	...	55,164
Sulphonamides	...	...	...	107,990
Proprietary medicines	...	...	...	734,717
Unclassified	...	...	...	540,342
Glycerin	...	...	...	16,436
Acetone	...	...	...	58,502
Citric acid	...	...	...	26,838
Salicylates	...	...	...	13,916
Perfumery and toilet preparations	...	...	...	
Lipstick, face powder, etc.	...	...	...	235,796
Dentifrices	...	...	...	113,580
Toilet soaps	...	...	...	166,619
Synthetic detergents	...	...	...	537,018
IMPORTS				
Vitamins	...	...	...	127,674
Antibiotics	...	...	...	27,978
Alkaloids	...	...	...	69,285
Proprietary medicines	...	...	...	41,862
Unclassified medicines	...	...	...	242,751
Borax	...	...	...	99,072
Iodine	...	...	...	11,254
Menthol	...	...	...	10,646
Essential oils	...	...	...	
Bergamot	...	...	...	6,428
Clove	...	...	...	11,432
Lavender	...	...	...	6,846
Lemon	...	...	...	17,880
Orange	...	...	...	17,527
Peppermint	...	...	...	55,691
Unclassified	...	...	...	210,834

## FIGURES IN THE PHARMACEUTICAL WORLD

WITH the help of Lady Fleming in providing access to original manuscripts and the collection of material, the official biography of the late Sir Alexander Fleming, discoverer of penicillin, is being written by Professor Florencio Bustinza, University of Madrid, Spain.

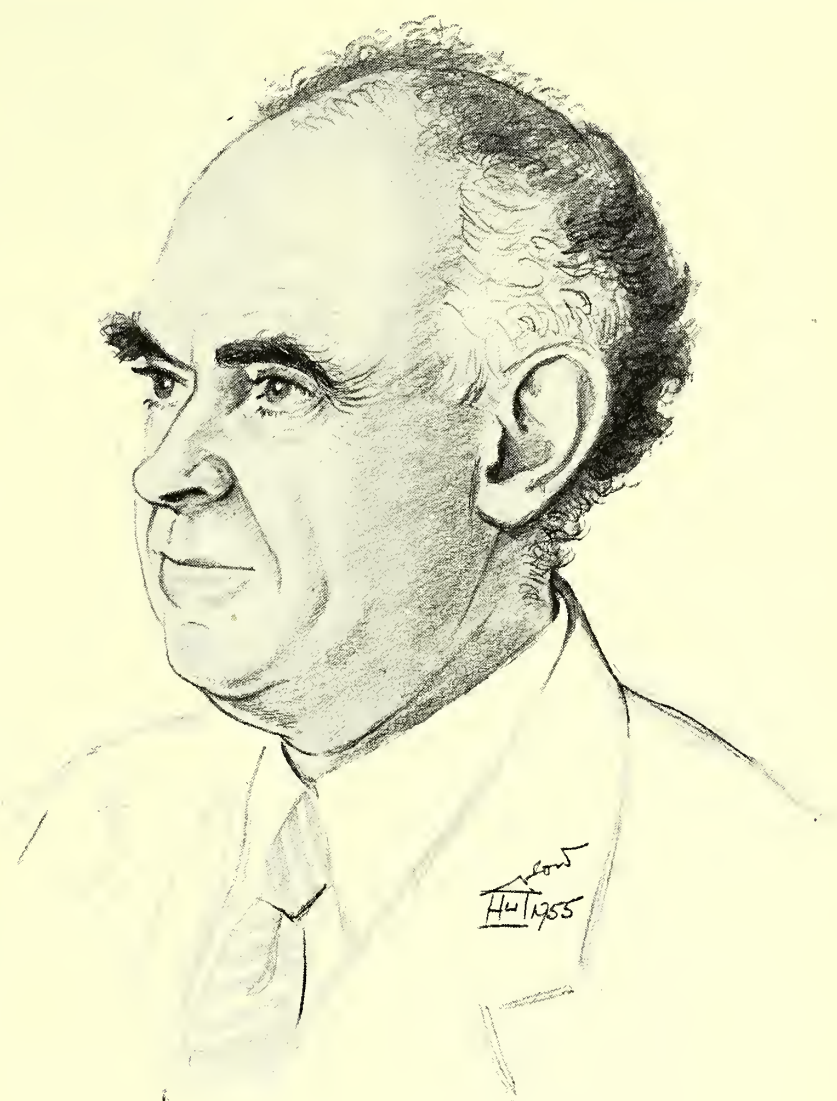
To those who do not know him it may seem remarkable that the life-story of a Scot, whose scientific work was done principally in London, should be written by a citizen of Spain. But Dr. Bustinza is a man of exceptional calibre. Professor of plant physiology in the faculty of sciences in Madrid, he is probably the principal Spanish authority on antibiotics.

He is also a distinguished pharmacist. In fact, in gaining his doctorate of pharmacy in 1930, he won (as he did also in his doctorate of sciences) the highest awards of the University of Madrid. He engaged on post-graduate studies in the University of Geneva, Switzerland, and is a member of the Royal Academy of Pharmacy, Madrid.

Professor Bustinza is no stranger to Britain. By the vagary that his father, a Spanish Merchant Navy captain, was in British waters at the time, he was born in Liverpool on November 7, 1902. That fact has little significance, since the ship returned to Spain with Florencio and his parents aboard. But at a later stage he was at school for two years at St. Joseph's College, Dumfries, Scotland.

Though his career has been on vastly different lines from his father's, it may be that he has inherited from the sea captain something of the world traveller, for, in order to discuss antibiotics with the leading authorities in this country and the United States, he has travelled extensively in both countries. He was on terms of personal friendship with Sir Alexander Fleming during the latter's lifetime, and has visited Professor Florey, Professor Raistrick, Dr. Chain and Sir Ian Heilbron in England, Dr. Charles Thom, Dr. Coghill and co-workers in Peoria, U.S.A., Dr. Dubos in New York, and Dr. Waksman, discoverer of streptomycin and neomycin at Rutgers University. He also entertained Sir Alexander, Dr. Waksman and others in his own home in Madrid. He has first-hand knowledge of several penicillin manufacturing plants of America, has visited the Speke, Liverpool, plant of the Distillers Co. (Biochemicals), Ltd., and on his recent stay in Britain called on Sir Harry Jephcott and others associated with the development of penicillin from its experimental stages to large-scale products. He has been carrying out an extensive research at the library of the Royal Society of Medicine connected with the work of Sir Alexander and his access to the personal effects of Sir Alexander has brought to light new proofs of the true greatness of that modest, unassuming genius. Expert knowledge, therefore, is supplemented by manifold contacts to equip Professor Bustinza richly for the task to which he has set his hand.

What of his prowess as a writer? Apart from many published research



### 33. Professor FLORENCIO BUSTINZA

papers on the antibiotic activity of lichens, usnic acid, and *Penicillium funiculosum*; he has written several books on natural sciences, agriculture and industrial technology, and in addition two books, "From Pasteur to Fleming," which tells the story of penicillin; and "From Koch to Waksman," which is the history of tuberculosis from the recognition of its causative organism to the discovery of streptomycin. The forthcoming work — the biography—which he started in 1953, is probably destined for a far wider readership, as it is to be published both in English and Spanish. It may be followed by a critical appreciation of Sir Alexander's researches.

To have attained to such international reputation might have tempted some to forget their pharmaceutical "roots." Not so Professor Bustinza. If tackled he would, perhaps, admit that it would

be distasteful to him today to be compelled to engage in the practise of pharmacy. But his wife is a pharmacist, and of his two daughters, both students at Madrid University, one is studying natural sciences, the other to become a pharmacist. Justly, then, pharmacy can claim Professor Bustinza as one of its sons.

### WILLS

MRS. G. M. CARVER, M.P.S., Ruzawi School, Marendellas, Southern Rhodesia, left £4,240 (£4,214 net).

MR. E. J. COPE, M.P.S., 16 Woodway Crescent, Northwick Park, Middlesex, left £9,829 (£9,772 net). He left £10 to the Benevolent Fund of the Pharmaceutical Society.

MR. F. S. CULLEN, M.P.S., Foulsham, Guist, Norfolk, left £2,049 (£1,889 net).

MR. F. HINDLE, M.P.S., 18 Royal Avenue, Fulwood, Lancs, former secretary of Lancashire Pharmaceutical Committee, left £15,706 (£15,577 net).

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# The CHEMIST AND DRUGGIST

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## Pyrogens as Therapeutic Agents

IN his choice of subject for his address as chairman of the British Pharmaceutical Conference, 1955 (pp. 263-65), Professor J. P. Todd, Glasgow, brought his hearers back to a subject of which he has made a close study during many years. In 1948 Professor Todd contributed to the Conference with D. W. Wylie an "examination of the source and quantitative methods of testing" pyrogens and in 1949 an "examination of pyrogen from various sources." In 1952, with M. Dawson, he dealt with the assay of pyrogens, and at the symposium on pyrogens in London in 1953 he read a paper on leucocyte response to pyrogen from *Proteus vulgaris*. He has, in his address, avoided the all-too-easy expedient of retreading ground that had been covered at previous meetings of the Conference, or at the symposium on pyrogens organised in London in December 1953 jointly by the Pharmaceutical Society and the Society of Public Analysts.

Professor Todd directs pharmacists' attention instead (a) to certain pharmacological effects of bacterial pyrogen; (b) to recent work leading to a clearer understanding of its chemistry—though not yet to a precise elucidation of its (or their) composition and structure; but (c) above all to the exciting possibility that bacterial pyrogen may soon compensate for past villainies in the pharmaceutical laboratory and in patients' bodies by serving as a generalised agent of healing.

It is true that bacterial pyrogen has not yet gone very far along its new road. No less is it true that the substance is not a therapeutic agent possessing the specific action that has been the goal of most recent medical research. Nevertheless the speaker was able to cite numerous references to its clinical use with results that greatly impressed the investigators concerned.

The function of bacterial pyrogen that principally arouses those hopes is its apparent power of bringing about a general mobilisation of the body's defences. As a "stressor"—that is a drug causing the "alarm reaction"—it has the advantage that it acts in the absence of the illness or injury with which that reaction is usually associated.

Without, too, the dangers attending the administration of ACTH and cortisone, bacterial pyrogen appears to be similar in effect to those compounds in combating allergies, especially "stubborn multiple allergies." In subfebrile doses it seems specially useful for overcoming the depression often found in sufferers from allergic conditions. Promise has also been shown by bacterial pyrogen in the treatment of dermatological conditions.

Used in that way it needs to have its temperature-raising properties controlled, and that end is achieved either by simultaneously administering an antipyretic or by injecting the pyrogen subcutaneously or intramuscularly. Patients with diseases affecting the nervous system have also benefited from pyrogen therapy, and tissue damaged by duodenal ulcers has undergone rapid repair when treated with it.

Not often in Conference chairmen's addresses are members given so bright a glimpse of a potential future. In the nature of things those addresses are usually, when they deal with drugs, based on observed specific effects, and are therefore timed more usually in the recent past.

Non-specific therapy by stimulation of bodily defences is a field from which a previous movement of advance had later to beat a partial retreat. All must devoutly hope that the "interesting new discoveries," of which, said Professor Todd, "we are on the verge," will materialise—and that not too distantly. Much work of a pharmaceutical character is involved in taking through to completion the many researches at present in progress in the subject, and it may therefore be expected to come up again at forthcoming meetings of the Conference.

## Overseas Trade in July

RECENTLY published Board of Trade figures of United Kingdom exports and imports during July show an increase in both directions over those in June. They do not, however, give any clear indication of the trend of the country's trade because they still are under the influence of the transport strikes that occurred in June and the first few days of July.

Exports in July were valued at £223.1 millions, £66.1 millions above the figure for June, but 4 per cent. less than the average monthly rate of export in the first half year.

In the section drugs, medicines and medicinal preparations, July exports totalled £2,716,553 against £2,933,271 in July 1954. Australia was again the best customer, though the value of goods sold to her was, at £266,744, less than in the corresponding month of 1954, a decline that may be due to measures taken by the Australian Government some months ago to curb total imports. India was the second best customer, taking £225,950 worth of medicines during the month.

The detailed figures given in the table on page 256 show that the export value of most items has returned to something like the monthly average for the first four months of the year, although, as with the country's total exports, comparisons with previous months may be misleading.

Total imports, at £338.8 millions, were £44.8 millions more than in June, and 7 per cent. above the monthly average rate in the first half-year. With re-exports at £7.9 millions (16 per cent. below the monthly average for the first six months), the excess of imports (valued c.i.f.) over exports and re-exports (valued f.o.b.) was £107.8 millions, against a monthly average of £75.6 millions in the first half-year.

The Government's concern over that growing gap between exports and imports is reflected in Ministers' speeches, the most recent of which was the Premier's in Warwickshire on August 27, when he hinted at possible further measures to remedy the situation.

## BRITISH PHARMACEUTICAL CONFERENCE, ABERDEEN, 1955

## CONFERENCE PERSONALITIES

MR. D. EDWARDS, F.P.S., B.Sc. (Hons.), A.R.I.C., who is co-author of a paper on antituberculosis agents, is a lecturer in pharmaceutical chemistry at the Royal Technical College, Glasgow. After an apprenticeship with Boots, Ltd., Keith, Banffshire, he qualified as a chemist and druggist from Robert Gordon's Technical College, Aberdeen, in 1943. After war service during 1944-46 he returned to Robert Gordon's College for the course for the Pharmaceutical Chemist Qualifying examination, which he passed in 1947. He graduated B.Sc. with honours in chemistry from Aberdeen University in 1951, and was subsequently elected an associate of the Royal Institute of Chemistry. In 1951-52 he worked in the development department of Boots Pure Drug Co., Ltd., Beeston, Nottingham, before taking up his present post in November 1952. His chief interests are photography, wireless and tennis.

MR. V. WALTERS, B.Pharm., F.P.S., who is the co-author of a paper on the viability of *Bacterium coli* in aqueous solutions of benzylchlorophenol, is an assistant lecturer in pharmaceuticals at Chelsea Polytechnic, London, S.W.3. He served his apprenticeship in Kidwelly, Carmarthens, and after study at the University College, Swansea, and the Technical College, Cardiff, graduated B.Pharm. in 1946 and passed the Pharmaceutical Chemist examination in the same year. From then until 1950 he served as a hospital pharmacist in several London hospitals and transferred to his present post in September 1950.

MR. H. D. C. RAPSON, B.Sc., A.R.I.C., who is the co-author of a paper on the hydrolysis of aspirin in pharmaceutical preparations, was born in South Africa. He was educated at King's School, Canterbury, and worked for the Ministry of Supply during the 1939-45 war on problems connected with paint, petroleum products and vesicants. He graduated at Battersea Polytechnic and in 1946 joined the Vacuum Oil Co., Ltd., to take charge of the research section dealing with lubricants and petroleum products. He served several years on the miscellaneous tests panel of the Institute of Petroleum and concurrently gave part-time lectures at Northampton Polytechnic, London, on applied electrochemistry. He joined the staff of the Tin Research Institute in 1949 to do research on the electro-deposition of metals. He has contributed reviews on electrochemistry and electrometallurgy to the annual reports

of the Society of Chemical Industry. He recently joined the staff of Beecham Research Laboratories, Ltd., as head of the physical department after having completed two years' research at the Imperial College of Science and Technology, London, S.W.7, under Dr. F. C. Tompkins, on the application of chromatographic and radioactive tracer techniques to the study of gas adsorption phenomena.

MR. K. A. PROCTOR, B.Sc., A.R.I.C., who is the co-author of a paper on the spectrophotometric assay of injection solutions containing chlorocresol, is deputy head of the physical assay division of the standards department of Boots Pure Drug Co., Ltd., Nottingham. He graduated from Nottingham University in 1950 with first-class honours in chemistry and then rejoined the standards department of Messrs. Boots. He is chiefly interested in the application of physical methods with a view to their use in routine analysis, and is at present working for the degree of M.Sc. with a thesis on "The Application of the Feldman Cup Technique to Pharmaceutical Analysis." His interests include gardening and amateur dramatics.



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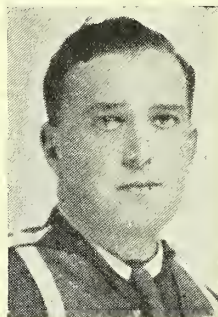
MR. K. A. KERRIDGE, B.Pharm., Ph.D., who is the co-author of a paper on the preparation and anti-bacterial activity of 2-phenacylpyridine and related ketones, gained the external degree of Bachelor of Pharmacy of London University in 1951. From then until 1955 he was a research student at the School of Pharmacy, Chelsea Polytechnic, London, S.W.3. He was awarded the Pharmaceutical Society's research scholarship, 1953-55, and gained his Ph.D. degree in 1955.



MR. R. GOODEY, who is the co-author of a paper on the chemical and microbiological assay of penicillin V, joined the Distillers Co., Ltd., research and development department at Epsom, Surrey, in 1939, where he was employed on general analysis. After service during the 1939-45 war and subsequent demobilisation in 1947, he joined the Distillers Co. (Biochemicals),

Ltd., research station at Bromborough, New Ferry, Ches. There he was initially employed upon the recovery of penicillin and streptomycin from fermenter broths, and more recently upon the assay of vitamins B<sub>2</sub>, B<sub>12</sub> and various antibiotics.

MR. L. J. EDWARDS, F.R.I.C., M.Sc., Ph.D., who is a co-author of a paper on the hydrolysis of aspirin in pharmaceutical preparations, is chief products manager of Beecham Maclean, Ltd. He joined A. Boake, Roberts & Co., Ltd., London, E.15, in 1933 as a laboratory assistant, and in 1938 transferred to the research department of that company. After graduating in 1941 he acquired a taste for physical chemistry and colloid science and took his Fellowship of the Royal Institute of Chemistry in branch B (with special reference to surface chemistry) in 1945. His M.Sc. thesis was on the constitution of aluminium stearate and his Ph.D. was based on ultra-violet spectrophotometry applied to the reaction kinetics of aspirin hydrolysis. In 1947 he joined Beecham Research Laboratories, Ltd., Brockham Park, Surrey, as head of the physical department, and early in 1955 he was appointed to his present post.



MR. W. T. WING, F.P.S., D.B.A., who is the author of a paper on factors affecting the absorption of phenol, in an examination of rubber used as a closure for containers of injectable solutions, is group chief pharmacist of the Newcastle-on-Tyne Hospital Management Committee. He attended the College of the Pharmaceutical Society, University of London, 1935-37, and was awarded the Society's Leverhulme scholarship in 1935 and its bronze medal in 1937. He passed the Pharmaceutical Chemist examination in 1937 and obtained the Diploma in Biochemical Analysis in 1939. He served as analyst in the laboratories of Allen & Hanburys, Ltd., 1937-38, and was pharmacist at Bethnal Green Hospital, London, 1938-47, later becoming chief pharmacist, Colindale Hospital, London, N.W.9, in 1947 and later chief pharmacist, Newcastle General Hospital, 1947. He is lecturer for the schools of nursing at Newcastle General Hospital and at the Hospital for Sick Children, Newcastle-on-Tyne, a member of the Newcastle Pharmaceutical Committee and on the committee of the Newcastle and Northumberland Branch of the Pharmaceutical Society. From 1951 to 1954 he was chairman of the Tyne, Tees and Wear Branch of the Guild of Public Pharmacists.



lems connected with paint, petroleum products and vesicants. He graduated at Battersea Polytechnic and in 1946 joined the Vacuum Oil Co., Ltd., to take charge of the research section dealing with lubricants and petroleum products. He served several years on the miscellaneous tests panel of the Institute of Petroleum and concurrently gave part-time lectures at Northampton Polytechnic, London, on applied electrochemistry. He joined the staff of the Tin Research Institute in 1949 to do research on the electro-deposition of metals. He has contributed reviews on electrochemistry and electrometallurgy to the annual reports

# British Pharmaceutical Conference

## ABERDEEN 1955

### Official opening and early events

THE ninety-second meeting of the British Pharmaceutical Conference was officially opened by its president (Mr. H. Steinman, president of the Pharmaceutical Society of Great Britain) on August 29.

With the president on the platform were the Conference chairman (Professor J. P. Todd); the Lord Provost of Aberdeen (Mr. George Stephen); officers and members of the Conference Executive, and members of the local committee.

MR. STEINMAN said that an examination of the reports of the previous Aberdeen Conference meetings threw an interesting light on the progress of pharmacy. 1885, the date of the first Conference in the City, had seen the introduction of a new Pharmacopœia, and the Conference chairman's address had dealt with the separation of prescribing from dispensing. Twenty-three years later the chairman's address had been on the same theme, and the supply of medicines was coming more and more into the hands of the professional pharmacist. By 1932 the functions of doctors and pharmacists were becoming more clearly defined. The 1955 Conference would provide convincing evidence that pharmaceutical science was expanding rapidly. Its contribution to the cure of sickness and the promotion of health had never been greater than at present.

Mr. Elder (chairman of the local committee) had told him that, on the social side, no effort had been spared to make the week a memorable one. Members were assured of a truly Scottish welcome.

#### From "A' the Airts"

LORD PROVOST STEPHEN said that it was a pleasure to receive such a large Conference to Aberdeen. Conference members had come from "a' the airts." He offered a special welcome to those from overseas and hoped that they would find the City attractive and full of social worth. The occasion was the fourth visit of the Conference to Aberdeen, the previous ones having been in 1932, 1908 and 1885. At that interval it would be due back again in 1980, and that was rather near to George Orwell's "1984." As Orwell had forecast a state of war by that date he hoped that the Conference would avoid it by returning to the city much earlier than that. The Conference was quite distinct from the Pharmaceutical Society, but he understood that they worked well together. He had jokingly remarked, when the floor covering at the Town Hall had been renewed for the recent visit of the Queen and the Duke of Edinburgh, that the Conference local officers had worn out the carpets by their visits there on behalf of Conference members.

After thanking the Lord Provost for his sincere welcome, but before handing over the Conference to its chairman, MR. STEINMAN gave a reminder that Professor Todd had been associated with the teaching side of pharmacy for forty years. No less important was his appointment as Regional Director of the Scottish Blood Transfusion Service in the Northern area during the 1939-45 war. He had contributed numerous papers to the pharmaceutical Press on bacteriological subjects, and had distinguished himself in academic and other fields of pharmacy.

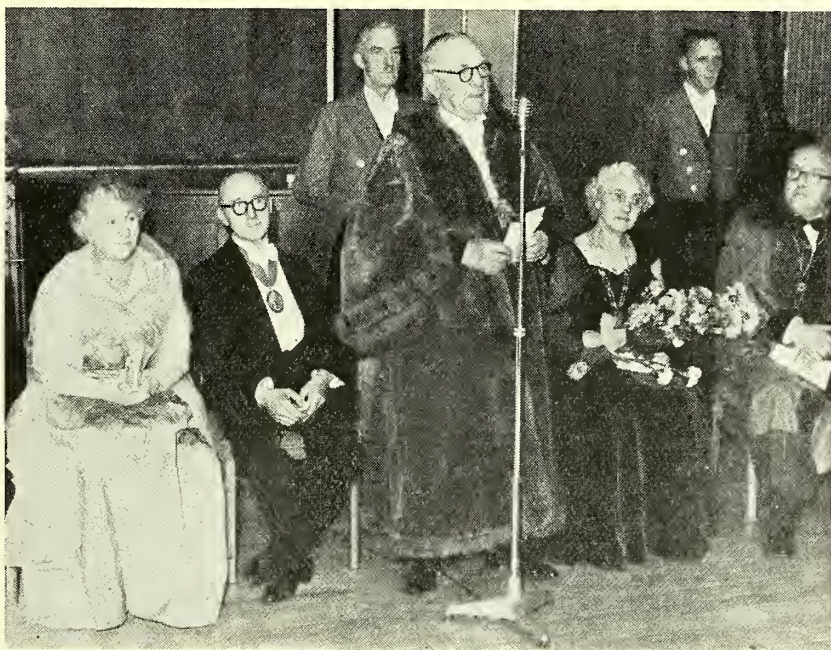
PROFESSOR TODD then moved into the chair and gave his address as chairman (see p. 265).

A vote of thanks to the chairman was proposed by DR. G. BROWNLEE. Professor Todd, he said, had mentioned the "nuisance aspects" of pyrogens. That problem was pharmaceutical, and had been attacked in a pharmaceutical way. Although, from time to time, one could see pieces of research projected ahead of their immediate applications, a general advance was not possible until certain other facets had caught up. Pharmacological applications of the substances mentioned would possibly be making

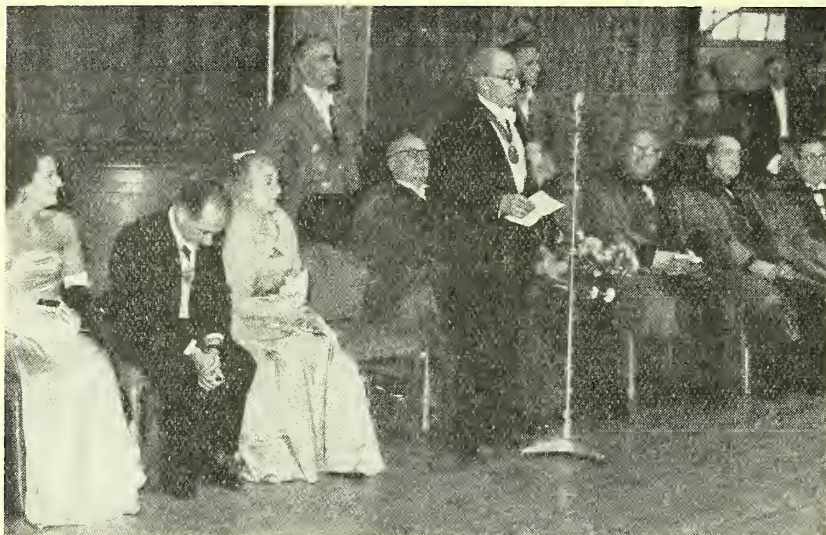
their mark in future years. Here was a pharmaceutical problem, tackled with the resources of a pharmaceutical department, and pushed through to its conclusion. Professor Todd had exemplified the persistence of and belief in British pharmacy as a profession. Looking back through previous chairmen's and presidents' addresses he had found that, of ninety-one delivered, forty-one had been given over to science. It was always in those years in which pharmacy appeared to speak with authority and to rest firmly on its own ground that the chairman had dealt with a scientific subject. Dr. Brownlee congratulated Professor Todd on being in the van of a new series of addresses dealing frankly with pharmaceutical problems.

DR. H. S. BEAN, seconding the vote of thanks, said that members had been treated that afternoon to a much simplified but lucid account of a difficult subject. Professor Todd had made a life-study of pyrogens. No man was better qualified or more able to present the pyrogen story. He had introduced those present to newer aspects of that story. He had been listened to eagerly by his fellow examiners on the look-out for new material. Some of that material, when injected into examination papers, would produce by yet another method the "alarm reaction."

PROFESSOR TODD, replying, said that



The lord provost of Aberdeen (Mr. George Stephen) receives guests at the Beach Ballroom. Also in the group are magistrates in their red robes, and Conference officers.



Professor Todd replies to the lord provost's welcome.

in his work as an examiner he had tried to avoid the subject of pyrogens, but had had great difficulty in restraining his colleagues from doing so. There was the true story of a student sitting for the Pharmaceutical Chemist qualifying examination in Edinburgh who, when asked "What are pyrogens?" had replied "The droppings of airborne bacteria." Amid the laughter that followed that anecdote Professor Todd closed the proceedings.

#### Arrival at the Conference City

Conference members arriving at Aberdeen by rail were met and escorted to their hotels by local car-owning pharmacists, who worked to time-table, each taking a two-hour duty stretch throughout Saturday, Sunday and Monday. At the station on those days every train from 6.30 a.m. to 10.30 p.m. was met, as well as the early morning trains on Tuesday. Members arriving by car were met at Brig o' Dee and

escorted into the city and to their hotels, and at Dyce airport Mrs. Cruickshank, wife of the Dyce chemist and a member of the ladies' committee, acted as hostess. The whole scheme was organised by Mr. McNeil (transport convener).

Registration took place during Monday, with buffet tea at the Music Hall.

#### Civic Reception

About 700 were present at the civic reception at the Beach Ballroom on the evening of August 29. The guests were brought to the ballroom in special coaches, received on the floor of the truly beautiful ballroom by the lord provost (Mr. G. Stephen) and Mrs. Stephen, by local magistrates and by Mr. Elder (chairman, local committee) and Mrs. Elder. The scene was most colourful, with the lord provost and magistrates in their scarlet fur-trimmed civic robes.

The lord provost extended a cordial

welcome to what he considered "their lovely ballroom." Members of Conference might have thought that afternoon that he had spoken in extravagant terms about the attractiveness of the ballroom, but after seeing it—and having danced on its floor—they would, he was sure, agree with all he had said. He could not bestow upon members the freedom of the city, but could bestow the freedom of the ballroom. That he now did.

PROFESSOR TODD expressed, on behalf of the Conference, members' gratitude for their kind welcome. Dancing followed.

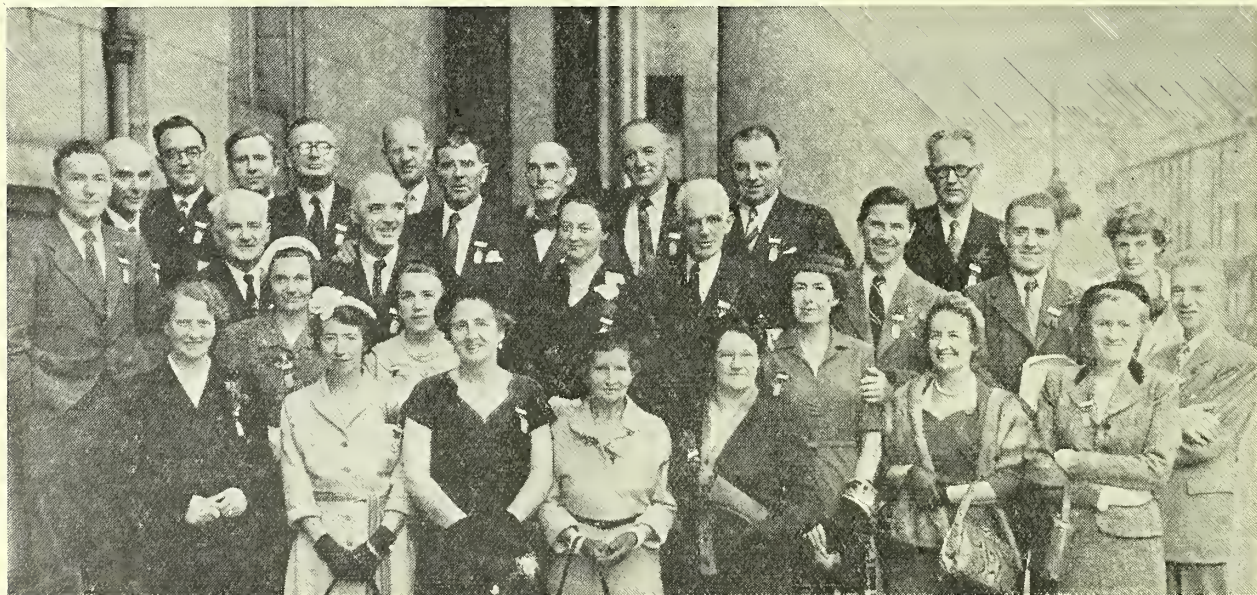
At a luncheon at the Music Hall on Tuesday, August 30, THE CHAIRMAN read greetings from Mr. A. T. S. Sissons (dean of the Victorian College of Pharmacy, Melbourne, Australia), Mr. Hugh Campbell, Montreal, Canada, and Mrs. Skinner (widow of the 1932 Aberdeen Conference chairman).

#### Ladies' Excursion

The ladies' tour of Aberdeen on the morning of August 30 started in rain, but happily the sun shone later. The coach driver gave a loud-speaker commentary on the places of historic and general interest, including hospitals, university colleges, the harbour, docks, fish market and Old Brig o'Dee.

#### University Reception

Members of the Conference attended a reception by the University of Aberdeen at Marischal College on the evening of August 30. Ascending the crimson-carpeted staircase in Mitchell Hall the guests were received by Sir Thomas Taylor (Principal), Lady Taylor, Sir David Campbell (president, General Medical Council), and Lady Campbell. A colourful scene was provided by the wearing of academic robes, and those guests who were not dancing viewed the scene from handsome carved galleries. The museums had been left open for inspection. Dancing continued until 11.30 p.m.



A group mainly from the Irish Republic. Among those photographed are the president of the Pharmaceutical Society of Ireland (Mr. M. Costello) and Mrs. Costello; the vice-president (Mr. P. F. McGrath); treasurer (Mr. H. Corrigan); president of the Irish Drug Association (Mr. D. Murphy) and Mrs. Murphy. Also in the group are Mr. E. A. Brocklehurst (immediate past-president of the Pharmaceutical Society of Great Britain) and Mrs. Brocklehurst.

## Conference Chairman's Address

## BACTERIAL PYROGENS

[ABRIDGED]

DR. SEIBERT: "I started to work with the pyrogen back in 1923 and I can really say that I have never found any more difficult work than the work with pyrogen. In fact, I used to call it my little blue devil because it was there and wasn't there. I was impressed with the elusiveness of it, and the fact that it might be everywhere. It appears in all your flasks, all your water and in everything you work with. I am wary of the possibility of contaminating what I am working with, with a pyrogen. I have to wash all my glassware with freshly distilled water, make all my chemical reagents up with freshly distilled water, and I have to use special filters in order to eliminate the pyrogen.

Pyrogens exist in very small concentration and give such a tremendous reaction. I am so much impressed with all this work that is being done, but I wonder, has it been done that carefully? Are some of these pictures that you get mixtures, due partly to what you are giving but also due to contaminants?"

*Proceedings Research Conference on Activities of Bacterial Pyrogens at the University of Pennsylvania March 2, 1951, S. 58.*

**B**ACTERIAL pyrogens have recently attracted renewed interest as therapeutic agents. I say "renewed" because in different forms they were used with some success earlier in this century for the treatment of a number of disorders. In this country we are thinking too much about their nuisance value and not enough about their potentialities in the treatment of disease. I would like to discuss their potential value as non-specific therapeutic agents and to show that we have now reached the stage where bacterial pyrogens in pure form can, with advantage, replace the older materials and methods for producing a general stimulation of the defence mechanisms of the body.

Great interest used to be taken in the therapeutic uses of materials such as typhoid vaccine, used non-specifically, but during the past thirty years the older preparations have been falling out of use. The flood of modern chemotherapeutic agents has hastened the process. Their active principles have recently been isolated and purified, and their effects and dose can now be readily controlled. In the new forms the undesirable side effects are almost entirely absent. Bacterial pyrogen appears capable of effecting, safely and rapidly, a general mobilisation of the body defences.

#### The "Alarm Reaction"

The stimulation and mobilisation of body defences which follows bacterial infections or trauma, or the injection of irritant substances, or excessive heat or cold, has for long been known to produce a state of alarm and stress in the animal body. No complete understanding has yet emerged of the complicated chain-reactions which Selye has called the "alarm reaction<sup>1</sup>." The substance or condition which produces it has been called the "stressor." A number of stressors produce the same or similar effects to those produced by the injection of bacterial pyrogen, but



PROFESSOR J. P. TODD,  
Ph.D., F.P.S., F.R.I.C.,

Conference Chairman 1955

pyrogen differs from the others in producing its effects without disagreeable or unpleasant aspects such as being ill or injured. One would hesitate to induce a general stimulation by infecting a sick person with an organism causing disease in order to alleviate the patient's sickness if another less drastic method were available, or to inject an intensely painful and irritating substance like turpentine or sulphur deep into a muscle, but that is still practised in certain places, for its benefit to the patient in certain disorders<sup>3</sup>. These general methods of stimulating the body's defensive mechanism, including the injection of bacterial pyrogen, are forms of non-specific therapy as opposed to specific therapy seen in the use of diphtheria antitoxin to treat diphtheria.

#### What Caused "Protein Shock"

One of the forms of non-specific therapy practised shortly after the beginning of the century was "protein shock." At that time it was believed that almost any protein from almost any source was effective, and led to the injection of milk protein, tumour extracts, horse serum and many others. It is believed now that the stimulating effect of the injection of protein from many different sources was really

the result of contamination with bacteria or their metabolites and was, in fact, a reaction caused by bacterial pyrogen. It is not easy to prepare protein material or derivatives such as blood plasma or protein hydrolysates or even milk for intravenous injection without bacterial contamination, and it is no reflection on the competence of the earlier workers to say they were mistaken as to the agent causing the reaction. Simple protein as such does not produce a specific stimulation, though it has its special effects. But some bacterial proteins may function as carriers of the pyrogenic grouping under conditions which we shall discuss later.

#### The Active Component

Bacterial vaccines, notably typhoid and TAB, were also used as a protein source with surprisingly good results; but it was not then suspected that what is now believed to be the active component of the vaccines, namely bacterial pyrogen, belonged to the same group of substances as those which at that time were causing trouble in injection fluids. It is now tolerably certain that the active substance in our vaccines and pharmaceutical injections and the very active substance now being supplied for clinical trials are the same, or differ in minor characters only. By any of the agencies mentioned as well as by physical methods and tissue injury, many bodily changes including high fever can be produced. They are accompanied first by a fall in the white blood cells (leucopenia), then by an increase in the white cells (leucocytosis), and by other changes characteristic of the "alarm reaction."

Menkin<sup>2,3</sup> and Abderhalden<sup>4,5</sup> have shown that there exist in body tissues and cells endogenous substances capable of causing the characteristic fever and white-blood-cell changes produced by bacterial pyrogen. To distinguish bacterial pyrogen from the endogenous pyrogen of the body tissues we usually refer to it as "exogenous pyrogen." We do not know what relation, if any, exists between our exogenous bacterial pyrogen and the endogenous factors of the body as described by Menkin and Abderhalden but it is widely felt that either they or other endogenous substances must be concerned. When, for example, sulphur is injected into a muscle a great deal of local inflammation and oedema is produced and local cell damage is caused resulting in a high and prolonged fever accompanied by the blood cell changes already mentioned. A distressing feature of this method is the great pain and discomfort caused. It appears here as if some endogenous pyrogen arising from the damaged tissue cells or white blood cells had been liberated after the injection. It is possible, therefore, to inject an ex-

## BRITISH PHARMACEUTICAL CONFERENCE, ABERDEEN, 1955

trremely irritating substance either intravenously or intramuscularly, and so to reproduce the effects characteristic of a highly pyrogenic reaction when in fact no pyrogen is injected at all. Dr. Favez<sup>6</sup>, head of a large tuberculosis clinic in Lausanne, has described the effect of PAS when given in massive doses by a vein, as is the practice in Switzerland and in the west of Scotland in the treatment of tuberculosis. Favez's patients were so much benefited by a stimulating side-effect of his undoubtedly non-pyrogenic material that he conceived the idea of the simultaneous administration of a purified pyrogen to increase and extend even further that effect. In certain types of tuberculosis he obtained highly beneficial results. Stimulation therapy is generally held to be contra-indicated in tuberculosis patients since it often liberates dormant organisms from resistant foci. Favez is convinced of the value of the method and has evidence to support his view. It is known that bacterial pyrogen has a fibrinolytic action<sup>7</sup> and Favez is of the opinion that this fibrinolytic effect may bring about the liberation of the tubercle bacilli from resistant foci, so exposing them to attack by chemotherapeutic agents which otherwise would be ineffective.

Pyrogen has effects other than the production of fever. In fact for therapeutic purposes the title is no longer very suitable, and its retention is justified only because any change would cause confusion. Westphal in Germany calls it *Reizstoffe* or "irritating substance." From recent clinical reports it appears that in a great many cases the pyrogenic (thermal) effect is unnecessary and undesirable, and it has become the custom to suppress the fever either by the administration of antipyretics or by using a smaller dose. There is a great deal of published evidence to support the view that the older methods and materials used in non-specific therapy had many virtues. With the advent of purified active principles capable of exact dosage and predictable effect it is possible to reassess the value of pyrogen in medical treatment.

#### Source and Nature

All the evidence suggests that only the Gram-negative organisms need be considered as fruitful sources of the pyrogenic and stimulating substances we have been discussing, and that the pyrogen is associated with the endotoxin. Gram-positive organisms killed by heat exert little or no pyrogenic action. Gram-negative bacteria, either alive or dead, have a powerful action when injected<sup>8</sup>. In general Gram-positive types allow soluble exotoxins to pass into the medium whereas Gram-negative types retain the complete endotoxic principles in or on the cell surface, and only soluble fractions including pyrogen are found in the medium<sup>9</sup>.

The endotoxin was first extracted in undegraded form by Boivin and his colleagues<sup>10-13</sup>. It has been further studied chiefly from the immunological and biochemical aspects. The water-soluble fraction was later studied for

another curious property: that of causing necrosis or breakdown in tumour tissues, a property of bacterial extracts which had been known for many years. The endotoxin exists in all types of Gram-negative organisms so far investigated, and in practically all of them the general structure and properties are much the same. The characteristic properties are not destroyed by heating in water at 100° C., whereas the exotoxins of the Gram-positive forms are, with few exceptions, quickly inactivated by heat. In most Gram-positive organisms the exotoxins are largely composed of protein, which readily suffers denaturation, whereas Boivin found that the Gram-negative endotoxins are complexes of polysaccharides and other constituents. In researches into the nature of the antigenic complex, Morgan and Partridge<sup>14</sup> showed that it consists of a complex of protein, active lipopolysaccharide and inert lipid. Goebel and others<sup>15</sup> had found that Flexner dysentery organisms (also Gram-negative) yielded a strongly antigenic and toxic endotoxin which went into solution in pyridine and water.

#### Endotoxin Studies

The pioneer endotoxin work of Boivin, Morgan and Partridge, Goebel and others paved the way for recent workers such as Westphal, who studied these substances mainly as sources of pyrogen, and for others such as Shear<sup>16-18</sup>, who studied them because of their tumour-necrotising action. The work made it clear that most Gram-negative organisms contain a similar complex made up of a protein, a toxic factor bound to a polysaccharide, and an inert lipid of the cephalin type. The toxic factor, which appears also to contain phosphorus, is the one in which pharmacists are chiefly interested, as it appears that that substance is mainly responsible for the pyrogenic and the other related effects. When isolated from the bacterial complex, the toxic factor seems to be attached firmly to the polysaccharide, which is therefore described as a lipopolysaccharide. The toxic lipid, usually found firmly bound to the polysaccharide, differs in structure and properties from the inert lipid previously mentioned, which is not at all toxic, and it is also a more complex substance. The whole endotoxic complex appears to constitute, or to be closely connected with, the surface of the bacterial cell in smooth varieties, the polysaccharide moiety resembling the capsular membrane of the pneumococcus in that respect. The polysaccharide is almost completely lacking in the rough forms of the organisms. It is an oversimplification to say that pyrogens are lipopolysaccharide. From R-forms a pyrogen can be extracted that is associated with the protein of the R-types of organisms. It is much less active than the pyrogenic lipopolysaccharide, suggesting that the degree of activity is related to the particle structure and that protein is a less suitable carrier for the activity-conferring lipid than is polysaccharide.

That is also shown if the toxic lipid is separated by acid hydrolysis from

either the protein or the polysaccharide when it occurs as a fatty or waxy substance insoluble in water but soluble in chloroform. Westphal<sup>19</sup> has shown that, if the separated lipid is dispersed by means of a surface-active substance such as Tween, it regains some, but not all, of its activity. Removal of the lipid from the bacterial complex removes also the toxic and pyrogenic properties leaving either degraded polysaccharide or simple amphoteric protein. If the bacterial endotoxin, which is composed of a complex of bacterial protein, lipopolysaccharide and inert lipid, is split by hydrolysis in alkaline alcoholic solution, a toxic lipopolysaccharide and a non-toxic protein are obtained; whereas gentle acid hydrolysis results in a toxic protein and a degraded non-toxic polysaccharide. Thus the toxic pyrogenic factor may occur along with a polysaccharide or with a protein carrier, according to conditions.

Workers who have investigated the problem generally isolate the toxic lipopolysaccharide, largely because of the methods adopted and the fact that the lipid fraction is firmly bound to the polysaccharide. Recently (June 1955), Davies, Morgan and Record separated from *Shigella dysenteriae* a polysaccharide in three forms: a degraded form with a molecular weight of about 25,000 and proved non-toxic, non-antigenic but pyrogenic in relatively large doses; an undegraded polysaccharide, extracted from the organism with diethylene glycol, and having a molecular weight of the order of one million, poorly antigenic but pyrogenic in doses of 0.05 microgm./kilo; and a lipopolysaccharide isolated from the protein-polysaccharide complex with phenol. The lipopolysaccharide was of large particle size and was a powerful heterophile antigen, but was only weakly active in the production of specific agglutinins and precipitins in rabbits. The lipopolysaccharide concerned appears to be of the same order of pyrogenic activity as the pure lipopolysaccharides of Westphal. Morgan<sup>20,21</sup> showed that artificial complexes could be made by coupling the active lipopolysaccharide or the conjugated protein of dysentery or typhoid organisms to a variety of substrates such as agar or mucin or to proteins such as vitellin or serum globulin. Westphal<sup>19</sup> finds that such coupling occurs only when the toxic lipid is present. He has succeeded in transferring the lipid to a casein carrier, so producing a highly active artificial pyrogen.

#### Pyrogens in Pharmaceutical Solutions

Little is known about the nature of the pyrogenic substance in pharmaceutical solutions. It must be present in active form since the few bacteria originally present are represented only by their soluble by-products, usually much diluted. The active substance may be the lipopolysaccharide already described, or perhaps a more active form containing the active grouping favourably presented by a suitable carrier. Co Tui<sup>22</sup> succeeded in isolating from aqueous cultures of dead bacterial bodies a polysaccharide sub-

## BRITISH PHARMACEUTICAL CONFERENCE, ABERDEEN, 1955

stance free from protein and with high activity. Westphal and his colleagues in Germany and Switzerland improved Palmer and Gerlough's phenol process by extraction with water and phenol miscible at high temperatures; they separated on cooling to an aqueous phase containing lipopolysaccharide and nucleic acid and a phenol phase containing bacterial protein and inert lipid. Westphal has in this way produced probably the purest and most pyrogenically-active polysaccharide yet extracted<sup>23-26</sup>. From the material obtained by the phenol extraction of the acetone-dried bacterial bodies he separated the active substance from the nucleic acid by fractional precipitation with alcohol. He found that the method was applicable to all the Gram-negative organisms he examined. He and his colleagues were able to show that the lipopolysaccharide is electrophoretically homogeneous, with a molecular weight of about 1 million. Other workers examining active polysaccharides from similar organisms have given values of up to 10 million. It is probable that molecular weight is largely influenced by the condition of extraction and degree of polymerisation.

There is a need for a standard pyrogen, and at present Westphal's preparation is probably the most suitable. The great difficulty lies in separating the nucleic acid. It has been shown that Westphal's *E. coli* lipopolysaccharide contains about 40 per cent. of active lipid tightly bound to the polysaccharide carrier. Niemann<sup>27-30</sup> has examined a pyrogenic lipopolysaccharide isolated in a study of the tumour-necrotising action of a strain of *E. coli* and has shown the presence of a number of fatty acids such as lauric and myristic along with glucosamine, ethanolamine, phosphoric acid and a curious substance not hitherto reported which consists of a paraffinoid chain with two substituting amino groups. He calls this substance "necrosamine" and it may prove of great pharmacological interest. You will see that we are on the verge of interesting discoveries and that there remains a great deal of work still to be done. Westphal has endeavoured to produce active preparations for subcutaneous use by acetylation of the hydroxyl groups of the polysaccharide, and many other interesting attempts to modify the molecule with a view to modification of the pharmacological characters have also been made with some success. Acetylation of the sugars reduces the toxicity and modifies some of the stimulating actions, but the acetylated pyrogen prepared from *Salmonella abortus equi* is still undergoing clinical trials.

#### Mode of Action

The mode of action of bacterial pyrogen is not yet completely understood but it is believed that the fever and other effects produced as a result of injection are largely due to a stimulation of the central nervous and other systems by an endogenous factor or factors liberated into the bloodstream. After injection and before the rise in temperature takes place there is a great increase in the intake of oxygen; but the rise in temperature which follows

is produced by conservation of heat by the constriction of surface blood vessels rather than by an increased heat production by shivering<sup>31,32</sup>. Antipyretics will abolish the temperature response without interfering with the other effects of pyrogen and that offers some therapeutic advantages but dictates the use of some other index of pyrogenic activity (e.g., a white-blood-cell method). The rise in temperature after intravenous injection of pyrogen is preceded by a latent period of no temperature rise of up to ninety minutes in man and rather less in rabbits, after which there is a fairly sharp rise in temperature. The explanation of the latent period is still a matter for speculation, but it has been shown that, if plasma is taken from a normal animal and incubated for a few minutes with pyrogen and then re-injected, the ensuing latent period is shortened<sup>33,34</sup>. That suggested that during the latent period a new substance is formed in the body or that the bacterial pyrogen is modified in some way to produce an endogenous substance which, if re-injected, acts more rapidly.

#### Believed but not Proved

We have already mentioned substances occurring in body fluids which display some of the properties of endogenous pyrogens and which are liberated more abundantly from tissues and cells on injury; it has not been proved that the reaction following the injection of exogenous (bacterial) pyrogen is due to the liberation of endogenous pyrogen from the tissues, though some workers believe that to be the case. If repeated daily injections of pyrogen are given to experimental animals the dose has to be increased in order to maintain the same level of response because the body seems quickly to become tolerant to the effects of pyrogen. That tolerance, however, disappears in two or three weeks in rabbits<sup>35</sup>, and that has to be remembered in carrying out routine British Pharmacopoeial limit tests. Man also becomes tolerant to the effects of injected pyrogen (that was a major difficulty in using vaccines as sources of pyrogen).

The mechanism of the production of tolerance is not clearly understood, but it is fairly well agreed that it is not directly related to the production of antibodies. That does not mean that the pyrogenic lipopolysaccharide is completely non-antigenic. It is a potent heterophile antigen. Even in those instances in which the presence of circulating antibodies to pyrogen have been claimed, no diminution in the pyrogenic response was found; and where pyrogens have been administered together with antigens the appearance and disappearance of tolerance of pyrogen did not parallel the appearance and disappearance of antibodies<sup>36-38</sup>, whose production was stimulated by the antigens. Beeson<sup>36</sup> has shown that an induced tolerance to pyrogen may be broken down by blocking the reticulo-endothelial system with colloidal thorium dioxide. That suggests that in the tolerant animal it is the reticulo-endothelial system which has developed enhanced ability to

eliminate or destroy endogenous pyrogen. Rapidly acquired tolerance, necessitating an increased dose to maintain the level of response, was one of the factors which discouraged the use of vaccines to produce a pyrogenic reaction to stimulate the body defences. The dosage of successive injections had to be rapidly stepped up in order to maintain an effective response. As vaccines are not without other toxic components the incidental increase in the toxic substances also administered had undesirable side-effects. The new highly purified pyrogens are free from side-effects of that kind, and while increasing dosage must be given to offset induced tolerance the initial dosage is so minute (of the order of 0.1 to 0.2 microgm. for Westphal's pyrogen Pyrexal, prepared from *Salmonella abortus equi*, and 1 to 2 microgm. for Piromen, the American preparation) that even the largest dose given contains little, if any, extraneous toxic material. We have found that the tolerance developed with a pyrogen preparation from *Proteus vulgaris* is also valid for a salmonella and a pseudomonas pyrogen, indicating a high degree of cross tolerance and a common active component in all three. The rise in temperature is always accompanied by changes in the white blood cells, though the reverse is not always true<sup>39-41</sup>. It is believed that this white-blood-cell effect is at least in part mediated by the liberation of ACTH from the hypophysis, with subsequent increased secretion of the adrenal cortical hormones<sup>39,42,43</sup>. It is interesting to speculate to what extent a course of pyrogen injections could replace a course of injections of either ACTH or cortisone in certain conditions. Several of the effects of ACTH, for example white-blood-cell effect, are similar to the effects of pyrogen and it was that finding which first prompted the replacement of ACTH by pyrogen in allergies. One important difference exists: ACTH causes a profound temperature-fall in normal animals. Added pyrogen reduces the hypothermia, and elicits the typical pyrogenic response with a delayed peak if large amounts are present. In smaller amounts the response does not correspond to the amount added.

#### Rôle of Adrenal Cortex

It is believed that the white-blood-cell changes following injection of pyrogen are largely mediated by the adrenal cortex, as they are substantially altered in adrenalectomised animals<sup>44-46</sup>. The adrenal cortex appears to be stimulated in response to the increased secretion of ACTH which may in turn be the result of a fall in circulating corticoids which may follow the demands of the tissues after injury or stimulation of the tissue cells by pyrogen. Evidence of pituitary adrenal stimulation by pyrogen is also found in the increased urinary excretion of corticoids<sup>47</sup> and in the fluctuation of plasma ascorbic acid levels<sup>48</sup>. Clinical experience has shown that long-continued administration of cortisone or ACTH has disadvantages; withdrawal effects are common and sometimes evidenced by resistant exacerbations<sup>47</sup>. The advantage of stimulating the adrenal cortex with pyrogen thus be-

## BRITISH PHARMACEUTICAL CONFERENCE, ABERDEEN, 1955

comes apparent: the withdrawal effects and endocrine disturbances do not occur. The influence of injected pyrogen is seen also on connective tissue and on the reticulo-endothelial system. The dermis is an essential part of the reticulo-endothelial system, and its stimulation by pyrogen has been shown dramatically in the healing effect of pyrogen on burned, wounded and frostbitten skin<sup>36,48</sup>.

It has been known for many years that Gram-negative bacterial extracts when injected have the power to cause breakdown and necrosis in tumour tissue. A preparation known as Coley's fluid was in use for some time for this purpose. Dr. Shear in America has investigated the purified lipopolysaccharide which he has obtained from *Serratia marcescens*<sup>16,18</sup> (*B. prodigiosum*). In addition to its ability to cause breakdown of neoplastic tissue that substance also proved to be a potent pyrogen<sup>50</sup>, and there is evidence of a common tumour-necrotising activity in many of the Gram-negative endotoxins.

## Pyrogens as Medicaments

Pyrogen is not a specific therapeutic agent like an antibiotic, which has its own bacterial spectrum, nor for that matter is it like an antitoxin. Its action is not an attack but a vigorous stimulation of the natural defences of the patient; and that is the rationale for its use in so many diseases. In general, pyrogen appears to be most usefully used in conjunction with other, specific therapies. It seems that pyrogen is capable of filling a rôle similar to that filled by ACTH and cortisone in allergic treatment but without their dangers. It is reported that subfebrile doses are no less effective in giving relief in many conditions<sup>51-55</sup>. Some patients report a sensation of relaxation and well-being after pyrogen treatment. Subfebrile doses of pyrogen are particularly useful in relieving the depression that often accompanies the allergic state<sup>54</sup>. Pyrogen, like ACTH or cortisone, can act only as an adjunct to specific diagnosis and therapy in allergy. It has been most useful especially in stubborn cases of multiple allergies.

Several authors have reported favourably on pyrogen in dermatological practice using febrile and subfebrile doses, and febrile doses with antipyretics. Fever can be avoided by utilising the subcutaneous or intramuscular routes of administration and pyrogen has been used successfully in this manner in various dermatological conditions as an adjunct to topical therapy<sup>55</sup>. More than one author has been impressed with the striking results obtained in the pyrogen treatment of otitis externa<sup>55-58</sup>.

The findings that in cats and dogs pyrogen aids nerve regeneration and that in transected spinal cords good anatomical regeneration takes place with enhanced vascularisation and absence of glial scarring are interesting<sup>59</sup>, and prompted one author to use it (Piromen) in 118 cases of spinal cord injury and disease. Beneficial results were obtained in 10 per cent. of

the patients. Improvement with pyrogen therapy has also been reported in other diseases involving the nervous system<sup>60-64</sup>. The effect of pyrogen in stimulating the repair of damaged tissue has been investigated in the treatment of duodenal ulcers. The results are reported<sup>65</sup> as relief in nineteen out of twenty-five cases with complete healing of the crater in eighteen out of the nineteen. In the detection of unsuspected foci in, for example, an infected gall bladder or other organ or tissue, patients have complained of localised pain while undergoing pyrogen therapy, and that has led to the detection of a septic focus at the site of pain.

One of the oldest uses of pyrogen has been the non-specific antibacterial effect; diphtheria carriers<sup>66</sup> have been cleared and other infections such as typhoid have been aided. The action of pyrogen as an adjuvant in sulphonamide and chloramphenicol treatment has also been reported<sup>67</sup>. Cases of agranulocytosis<sup>68</sup> caused by drug treatment have been successfully treated and it has been assumed that the leucocytosis which follows the administration of pyrogen is responsible for that success.

It is clear that in pyrogen we have a tool which, used intelligently, has great powers for good.

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Many other references are given in the full paper.

## Conference Garden Party

ON the afternoon of August 30, between 300 and 400 guests assembled on the lawns of Garthdee House—a mansion standing in beautiful grounds on the banks of the River Dee. The proceedings were opened by Mr. Walter Bain who introduced Mr. Scott Sutherland by whose courtesy the party was held there.

Pipers in the Stewart tartan welcomed the guests with "Cock o' the North" and other Scottish tunes. They were followed by Highland dancers. Tea was served in a marquee on the lawn.

## BRITISH PHARMACEUTICAL CONFERENCE, ABERDEEN, 1955

## SYMPOSIUM SESSION

OPENING the Symposium Session on plastics in the MacRobert Hall on August 30, THE CHAIRMAN said that the three speakers that afternoon would be dealing with a subject of great importance to everyone.

## Nature and Properties of Plastics

C. L. CHILD

[ABSTRACT]

HEATING plastics such as polythene to a moderate temperature produces a soft mass which flows very easily under pressure and which hardens again on cooling. If the material is cooled while it is held in an impressed shape, then that shape is retained when the plastic is cold. Materials behaving in that way are "thermoplastic." There is a second group of plastics which when heated first soften and flow under pressure, but then undergo a chemical reaction which leads to the linking of one molecular chain to another giving a rigid infusible material. Such materials are "thermohardenings" or "thermosetting."

The important semi-synthetic thermoplastics are all based upon cellulose which is chemically modified to form either esters or ethers. Cellulose nitrate, conventionally plasticised with camphor and castor oil, is the oldest of the plastics. It is best known under one of its trade names, Celluloid, and is variously described as cellulose nitrate, nitrocellulose, N.C. and pyroxylin. The first attempt to overcome the inflammability hazard of cellulose nitrate was to modify the cellulose with acetic acid instead of nitric acid. The product retains many of the advantages of nitro-cellulose, and overcomes its extreme inflammability, but cellulose acetate suffers from being much more sensitive to water and water vapour, so that its dimensional stability is inferior to that of nitro cellulose. Cellulose acetobutyrate, the mixed ester of acetic and butyric acids, was prepared in an attempt to overcome the moisture sensitivity and consequent dimensional instability of cellulose acetate. While the product is in that respect superior to cellulose acetate it remains inferior to cellulose nitrate, but it is extremely tough and much less inflammable than cellulose nitrate. Regenerated cellulose is the best known of all transparent packaging films, particularly under the name of Cellophane. It is made by converting cellulose into cellulose xanthate, extruding that in the form of a flat ribbon, coagulating it and then decomposing it so as to reform the cellulose, which is now in the physical state of a flat film. Regenerated cellulose film can be used either unplasticised or plasticised with glycerine. Its resistance to water and water vapour can be improved by coating one surface of the film with a compound of wax, urea-formaldehyde resin and nitro-cellulose.

It is in the synthetic thermoplastics branch of the plastics industry that the greatest advance has been made in the past twenty-five years. Polythene combines flexibility with toughness; low water absorption and low water

vapour permeability with good resistance to inorganic chemicals; good electrical insulation characteristics at all frequencies with durability. It does not rust or corrode, and is of very low specific gravity. Polyvinyl chloride (or PVC) is chemically very closely akin to polythene. The product is hard, tough and horny, less flexible and "waxy" than polythene. Depending on the nature and quantity of plasticiser used, the products can vary from hard and horny to soft, flexible and rubbery. Plasticised PVC calendered sheets and films are welded by the "high frequency" or "R.F." or "electronic" technique to make rain-coats, babies' pants, sponge bags, racquet covers, quilted card table tops, pouches and shampoo packs. Protective clothing is often made from textile fabric coated with PVC, either by calendering or by spreading a paste made by cold mixing polymer and plasticiser and which is subsequently gelled by heating. The polymers of methyl methacrylate are remarkable for their clarity and colourlessness, and for retaining those properties on exposure. They can be prepared in an unlimited range of colours, in the physical forms of powders, sheets, rods and tubes. They have a low specific gravity and are rigid and strong. Chemically they are resistant to inorganic and some classes of organic materials. Polymethyl methacrylate moulding powder is used for combs, brush backs and other toilet accessories, where clarity and a sparkling appearance are required. Fine powders of polymethyl methacrylate are used, either by injection moulding or by making a partial solution in catalysed methyl methacrylate monomer, for the manufacture of dental plates and false teeth and eyes. There are four basic grades of nylon in commercial production at the present time. Chemically, nylons can be regarded as polythene in which, at regular intervals in each molecular

—C—N—  
chain, the peptide group  $\begin{array}{c} \text{O} \\ || \\ \text{O} \end{array}$  has been inserted.

The material is stiffer and stronger than polythene. The first development of nylon in

forms other than monofilaments was as an injection-moulding material, and in that form it is proving to be a competitor to light metals. More recently, nylon grades suitable for extrusion have been produced. Tubing, such as for blood transfusion demand toughness, abrasion resistance and resistance to chemicals and temperatures above 100° C. and those are provided by nylon. Nylon type 66 can be chemically modified by methoxy methylation so as to render it soluble in alcohol and water mixtures, and from the solutions water vapour permeable films can be cast. Nylon plastics, particularly type 66, are notable for their high melting points, rendering them more amenable to conventional sterilisation techniques. That is made use of in the surgeon's nailbrush, with a moulded nylon stock and nylon monofilament tufts; in a light weight, unbreakable syringe; and in bottles and containers. Polytetrafluoroethylene illustrates the effect of substituting all the hydrogen atoms in polythene by fluorine atoms. Its chief uses are in situations where high temperatures and corrosive chemicals are met; in chemical plant (tank linings, gaskets), etc.

## Properties of Polystyrene

Polystyrene can be regarded as derived from polythene by substitution of one hydrogen atom in each ethylene unit by the phenyl radicle. Its important properties are, first its low cost, and secondly the ease with which it is injection moulded so that, although it has come into industrial production only recently, it has become the most important injection moulding material on a tonnage basis. Polyvinyl pyrrolidone is of unusual interest because its major uses so far established lie in the field of medicine and surgery and not in the conventional fields of plastics applications. It is sufficient to note in this paper the similarity in molecular structure of the polymer and a typical protein, as that doubtless accounts for its usefulness as, for example, a blood plasma substitute.

The important products of the synthetic thermosetting products group are made by the condensation reaction of



A glimpse of the audience at the Symposium Session in MacRobert Hall.

## BRITISH PHARMACEUTICAL CONFERENCE, ABERDEEN, 1955

formaldehyde with a compound which can react chemically in at least two places. Examples are aniline, phenols, urea and melamine. The term "phenol formaldehyde plastic" covers resins and moulding powders made not only with phenol, but also any cresol or mixture of them. The resins are dark coloured powders or liquids and are used as adhesives for many purposes. They are unaffected by moulds or bacteria or by moisture. The best known use of the resins is as the binder for a variety of fillers to make moulding powders of the type generally referred to as Bakelite. Amino-plastics include the condensation products of formaldehyde with aniline, urea and melamine. The urea resins are pale straw-coloured to colourless, and hence permit laminates and powders to be produced in a complete range of colours, whereas phenolic products, because of the basic colour of the resins, are perforce restricted to dark colours such as black and brown. The urea resins are cheaper, but more sensitive to moisture than their phenolic counterparts. On the other hand, they are odourless and tasteless and can be used in contact with foodstuffs and drinks. Urea moulding powders are used for closures, domestic and toilet ware, and cosmetic containers. Polyesters, derived in effect from polyhydric alcohols and polycarboxylic acids, are yielding a rich harvest of new polymers. Not all are plastics—indeed, the most famous of them all is a textile, Terylene. In one sense, the silicones are "the odd man out" of the plastics family, in so far as their molecular chain is not composed of a carbon backbone but of silicon and oxygen. Their uses lie in chemical- and heat-resistant rubbery tubes and mouldings; in foam suppressors; in polishes; and in medical and surgical applications. They are available in the forms of oils, greases and rubber and can be either thermoplastic or thermosetting in type.

### Plastics in Containers and Equipment

BY A. W. BULL

[ABSTRACT]

THE many plastics which are now available offer to the packer materials with valuable properties which must be known and understood for efficient functional design.

The thermosetting phenol-formaldehyde and urea-formaldehyde plastics used for closure manufacture contain fillers. Wood-filled and paper-filled urea plastics show water absorption if exposed to wet or humid conditions, and under fluctuating conditions of temperature and humidity the dimensional changes in a closure made of such material may result in loosening to an extent that leakage or loss of volatile constituents from the container may occur. Alternatively, if a closure contracts it may bind on the bottle neck making removal difficult. Ordinary wood-filled thermosetting plastics also show poor resistance to alkaline products such as cream of magnesia. For plastic caps for such products, it is advisable to specify an alkali resist-

ant grade.

Most phenol-formaldehyde mouldings can be sterilised by autoclaving but that does not apply to the urea-formaldehyde plastics.

Closures for collapsible tubes in thermosetting plastics are available which make an effective seal without a liner disc or facing. Wadless polythene caps for eye ointment applicator tubes are finding increasing acceptance.

Polythene closures may be either screw-fitting, snap-on, or plug-fitting. Neither polystyrene nor polythene are completely impervious to gases including water vapour and although for many purposes they afford perfectly adequate protection they do not give it to the same degree as an efficiently sealed glass container. To cope with any slight permeability of the pack to moisture vapour, hollow polythene plugs have been made containing a desiccant such as silica gel granules; the base of the plug is perforated.

A polythene insert is available which greatly improves the pouring qualities of aqueous preparations from the usual screw-necked glass bottle.

The use of plastic bonding for composite cork liners gives improved resistance to mould attack which so frequently occurs on composite cork liners bonded with glue of animal origin.

Rigid containers fabricated from plastics include bottles, tubes, jars and boxes. The plastics most widely employed for that purpose are polythene, polystyrene and cellulose acetate for bottles and tubes with phenolic and urea formaldehyde plastics also being used for boxes. Nylon bottles have recently been developed which are stated to be capable of repeated sterilisation by autoclaving at 120° C.

Plastic containers are available in a wide range of colours and opacities and are attractive in appearance; their light weight reduces freight charges and their mechanical durability reduces loss from breakage. Offset against the advantages are increased cost compared with containers of glass or metal, together with the greater reactivity of the material chemically and the effect on the contents of the physical properties of the material.

In the course of work in the author's laboratory to test the suitability of a wide variety of containers for packaging penicillin tablets the pack which was finally chosen to ensure greatest protection to each separate tablet was a strip foil pack in heat-sealing aluminium cellulose acetate laminate, each tablet being hermetically sealed in a separate pocket.

Polystyrene is not affected by acids, alkalis and alcohols but has poor resistance to chlorinated hydrocarbons and certain organic liquids. The lack of resistance to chlorinated hydrocarbons was recently demonstrated to the author in circumstances which might well affect the retail pharmacist. A proprietary cleaning fluid containing carbon tetrachloride had been used to remove stains from a garment which had then been hung on a polystyrene clothes-hanger to dry. There was still sufficient carbon tetrachloride in the

fabric to stick the garment very firmly indeed to the clothes-hanger. Polystyrene containers are used for cosmetic products. Lipstick cases may be made of polystyrene but may show surface marking and "crazing" after contact with many essential oils and materials used in perfume.

Polystyrene readily becomes charged with static electricity and attracts to it dust and fibres much more readily than does a glass or metal container. Dusting such containers with a dry cloth merely aggravates the problem. They can be cleaned with a cloth dampened with water or with a very dilute solution of a cationic detergent. Antistatic agents are now available for incorporation in plastics including polystyrene. The effect of plasticisers on plastics is of importance to pharmacists as dimethylphthalate and dibutylphthalate which are widely used in insect repellent preparations are also used in the plastics industry as plasticisers and may soften or dull the surface of plastic articles which come in contact with them. Spectacle frames are particularly vulnerable.

Among the virtues of polythene are flexibility, excellent resistance to chemicals (polythene containers have been found suitable for packaging hydrofluoric acid), and low water vapour transmission rates. Although polythene has good resistance to permeation by water vapour it has a relatively high rate of transmission compared with some other plastics, for oxygen, carbon dioxide and many organic vapours.

Each product must be specifically tested for suitability for packing in plastic tubes.

Bottles of irradiated polythene have been produced on an experimental scale. It is claimed that these can be sterilised with heat as the material does not melt at temperatures up to 350° F. and retains the toughness and flexibility of polythene itself.

Transparent polyvinyl chloride has been used to provide an outer safety covering for glass bottles used for pressurised aerosols. When put through bottle-washing machines designed for glass plastic containers may be blown off the holders by the jets.

The plastic films most widely used in this country in containers for pharmaceuticals are cellulose acetate, polythene, rubber hydrochloride (Pliofilm) and polyvinyl chloride. Those plastic films can be used alone or laminated to other materials. In packaging a product such as glucose with vitamin D, oxidation and access of moisture must be avoided. Polythene gives good resistance to moisture vapour but has a high transmission rate for oxygen compared with say regenerated cellulose film. The differential permeability of plastic films has been used in a pack for paradichlorobenzene for domestic use as a moth repellent. The paradichlorobenzene crystals are enclosed in a sealed polythene bag which in turn is contained in a bag of moisture-proof regenerated cellulose. Films or laminates are used for making bags, liners for drums or sacks and for "sachet" containers for liquids and

## BRITISH PHARMACEUTICAL CONFERENCE, ABERDEEN, 1955

powders. Many liquid shampoos are packed in plastic or plastic laminated sachets. Materials used for such products include polyvinyl chloride and Pliofilm/cellulose acetate laminates where the Pliofilm gives good water and water vapour resistance and the cellulose acetate good protection to the perfume. A disadvantage of Pliofilm, however, is that it deteriorates with age, particularly if exposed to sunlight, when the film becomes brittle and very readily broken.

Polyvinyl chloride is readily printed by accepted methods. It is resistant to water and water vapour, it is relatively unaffected by sunlight, has good ageing properties, and is resistant to inorganic chemicals including strong acids and alkalis but is attacked by some organic liquids.

Many of the thermoplastic films and laminates incorporating them can be sealed or welded by heat. Regenerated cellulose is not thermoplastic; the so-called moisture proof heat-sealing variety being dependent on a plastic coating, so there is no true weld, the strength of bond between two sheets being only equal to the strength of adhesion of the coating to the film. With polythene film, polyvinyl chloride and some other plastics the plastics sometimes stick to the hot sealing jaws. Coating of the jaws with polytetrafluorethylene eliminates this difficulty. Polytetrafluorethylene is a good insulator and jaws covered with this material must be applied for two to three times as long as with uncoated jaws to achieve a seal.

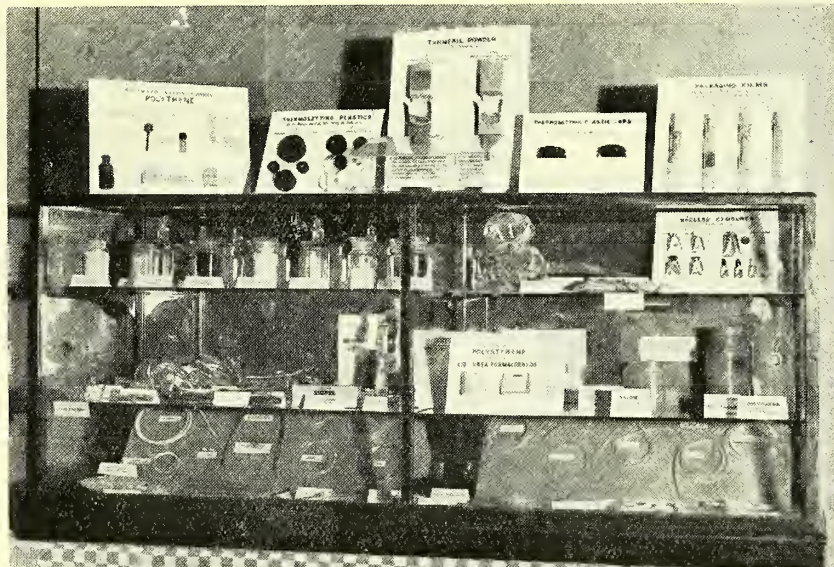
Polytetrafluorethylene is at present very expensive but it resists attack by all known solvents and chemicals other than gaseous fluorine and the molten alkali metals. It has anti-adhesive properties which make it useful for coating hoppers and slides on packaging machinery. Bearing surfaces coated with this plastic need no lubricant.

Many plastics find application in equipment used in processing or packaging pharmaceuticals. Fabrics woven from plastic filaments such as nylon are used for sieves and filter cloths. Microporous polyvinyl chloride sheet provides an excellent filter medium. Polythene funnels and buckets provide non-breakable apparatus for handling corrosive materials. Aniline-formaldehyde plastics are well known under trade names in the form of laminated surfacing for table tops and dispensary benches. Transparent polymethyl methacrylate is used in making dispensing screens for aseptic working. The handling of strong solutions of hydrogen peroxide has been helped materially by development of a polyvinyl chloride hose reinforced externally with fabric woven from polyester filaments.

The third paper is held over for lack of space.

#### Discussion

MR. R. L. STEPHENS, Brighton, asked Dr. Child where the field of plastics ended and that of resin chemistry began. Was the absorption of chemical substances likely to take place in plastic



Exhibition of plastics set up in entrance to Music Hall for the interest of members attending the Symposium Session.

tubing used in filling operations? If it did, there would be a danger of contamination when the product that was being filled was changed. Had Dr. Child any examples of ways in which plastics could be fabricated extemporaneously, as pharmacists liked "fiddling around with bits and pieces" in shops and laboratories?

MR. N. J. VAN ABBE, Loughborough, said that the use of the moist-granulation tablet-making process would at times be suitable provided a non-aqueous solvent could be obtained for the granulating agent. PVP was useful for that purpose and could be dissolved in alcohol or chloroform. It did not interfere with disintegration. Might it be possible to bond polytetrafluorethylene with tablet punches to prevent sticking?

MR. J. D. KULKARNI, Nottingham, asked for comments on the causation of skin diseases by plastic watch straps.

MR. A. R. ROGERS, Brighton, asked Dr. Child if there were plastics with good transmission to ultra-violet light.

DR. K. R. CAPPER, London, said that it was important that plastic containers should only be used by pharmacists for the packing of dispensed medicines after careful testing to ensure that they did not interfere with the medicaments, particularly with such items as eye drops. For dispensed medicines conventional materials might continue to be the ideal for some time to come.

MR. J. A. FREEMAN, Hounslow, said that manufacturers had been troubled by the presence of sulphur in regenerated cellulose used in packaging for substances such as mercurials. They would also like to fix standards for glass bottles in using plastic plugs and caps. Plastic caps and liners were satisfactory, but the adhesive used on them was generally poor. They would like advice from the experts on sterilising those internal plugs. Some plastic caps were satisfactory in Britain, some in the tropics, but one had not yet been found which was satisfactory in both climates.

(To be concluded)

#### Plastics Exhibition

IN connection with the symposium session an exhibition of plastics was arranged in the main foyer of the Music Hall. In a display cabinet were examples of materials used in the manufacture of plastics; of plastic materials used for containers and apparatus; and of the right and wrong choices of plastics for various purposes.

Polythene packaging components were shown on a display card, and inside the display case were examples of instruments, syringes, sprays, bottles and other containers in plastic, wadless closures for collapsible tubes, bottles in polyvinyl chloride and in nylon, and a glass bottle for pressurised aerosols with a protective anti-shatter coating of polyvinyl chloride. Forms of plastic tubing were shown, as well as plastic pessaries, dentures, and artificial eyes, and a plastic hand-splint adapted for treatments using radioactive cobalt.

Bottle-cap exhibits pointed the importance of choosing the right type of plastic for a particular purpose. After autoclaving for one hour at 15-lb. pressure, phenol-formaldehyde caps were intact, while those made from urea formaldehyde showed extensive damage. Phenol-formaldehyde caps used as closures for aluminium hydroxide gel were shown as proof of good resistance to alkali, while "general-purpose" plastic showed cracks and splits.

Examples of the uses of plastics in packaging included a package of turmeric powder in a carton with rubber-hydrochloride inner bag. The volatile oil had penetrated the bag, causing staining of the carton and softening of the printers' varnish. In a similar package having a moisture-proof regenerated cellulose bag, the oil had been retained. An exhibit demonstrating water-vapour transmission through packaging showed four bags of rubber-hydrochloride, polythene, regenerated cellulose, and moisture-proof regenerated cellulose. Each bag contained silica gel with a cobalt salt indicator. A pink colour indicated water present.

## BRITISH PHARMACEUTICAL CONFERENCE, ABERDEEN, 1955

## SCIENCE SESSIONS

THE chairman opened the Science Sessions on Tuesday morning. He called upon Mr. Whittet to read the first paper.

### Preparation of Aminophylline Tablets

T. D. WHITTET

OF six samples of aminophylline tablets purchased on the open market from different sources, the colour varied from white to pale yellow and the odour from practically none to a marked odour of ammonia. No positive correlation exists between colour and odour. Of samples of aminophylline powder purchased from each of six manufacturers the colour varied from white to pale yellow and the odour from practically none to a marked odour of ammonia or acetamide. Again there was no correlation between colour and odour. Batches of tablets were prepared from all of those samples of powder by each of three methods. Method A. Starch, talc, magnesium stearate and aminophylline were granulated by the moist granulation method. The granules were dried carefully and compressed into tablets. Method B. A base consisting of talc and starch was prepared by moist granulation and subsequent drying, and the dry base was mixed with the aminophylline and a small amount of magnesium stearate and the mixture compressed into tablets. Method C. Aminophylline, starch, talc and magnesium stearate were mixed and compressed into "slugs." Those were broken up through a 16-mesh sieve and the 36-mesh dust recompressed. The dry granules obtained were mixed with more starch and magnesium stearate and the mixture compressed to give the finished tablets. When freshly prepared the tablets were all practically white or pale cream in colour and almost odourless or did not have more than a faint odour. After six months, tablets made by moist granulation varied in colour from pale cream to very deep cream and all smelled strongly of ammonia. Most of the tablets prepared by the other two methods were white in colour and practically odourless. After one year's storage the colour of the tablets made by moist granulation had become brown, whereas those made by the other two methods remained as they had appeared after six months. Samples of all the tablets were assayed after six months' storage. Results showed that the samples prepared by moist granulation were unfit for use after six months because of their physical properties although they still complied with the pharmacopoeial requirements for theophylline and for ethylenediamine content. Those made by method B were all reasonably satisfactory in physical properties after one year, and complied with the requirements for strength of active ingredients. With the exception of one sample, the tablets made by method C were satisfactory in physical properties after storage for one year. The faulty sample was also very low in

strength and another sample was also low in strength when assayed after six months. Six different samples of tablets enclosed in screw-capped white glass bottles were exposed to direct sunlight for three months. Assays showed that within experimental error no loss of strength had occurred. One sample prepared by moist granulation and one by preliminary compression were stored in screw-capped bottles with cork wads at 37° C. in an electrically heated oven for six months. The former had become pale cream in colour with brown spots and had a faint odour of ammonia. The latter had remained white and had a faint odour of ammonia. Similar samples were stored in loosely closed bottles over water to give an atmosphere with maximum moisture content. At the end of seven months the tablets made by moist compression had become deep brown in colour and had a strong odour of ammonia. Those made by preliminary compression were still white and practically odourless.

*From the Pharmaceutical Department, University College Hospital, London.*

### Discussion

DR. K. BULLOCK, Manchester, asked for some information on the possible errors in the analyses.

DR. G. E. FOSTER, Dartford, suggested that Mr. Whittet might have tried preparing the aminophylline himself, purifying the ingredients before use. He might thus have got more information on the possible impurities that might cause trouble. Dr. Foster pointed out that he had not carried out the analyses for Mr. Whittet himself but had had them done in the laboratories at Dartford. If there was anything wrong with the results, however, he would take the blame. The sampling for analyses had been done by Mr. Whittet. He assumed that the samples were representative. Some of the assay figures to two decimal places might be misleading. The first decimal place would be nearer the truth. The second place had been put in by his "over-enthusiastic assistants."

MR. H. S. GRAINGER, London, said that there was no mention of the strong possibility that a source of discoloration might be the sequestering action of aminophylline and similar compounds. Metallic ions, especially iron in the sieves used in granulation might be responsible for discoloration.

MR. V. REED, Lewisham, said that a bottle of proprietary tablets containing aminophylline had smelt of ammonia: would the tablets be affected by that? Would they deteriorate?

MR. N. J. VAN ABBE, Loughborough, said that aminophylline was a strong binding agent. How many punches and dies had been broken by Mr. Whittet in his experiments?

MR. T. C. DENSTON, London, said that the B.P. moist granulation method gave a wide latitude. Quite precise methods should have been described in the paper.

DR. F. HARTLEY, London, asked why

ethylenediamine was added to theophylline in an oral preparation. It was not essential and was only a solubilising agent. Even if discoloration occurred had it affected the effectiveness of the concoction? Mr. Whittet might like to do a critical study of the diuretic effect of theophylline and theophylline and ethylenediamine. Perhaps he would find that it was possible to do without ethylenediamine.

MR. WHITTET, replying to the discussion, said that he would have liked to carry out purification of aminophylline. He was aware of the sequestering danger. He had particularly noticed that if granules were passed through a brass sieve, a vivid purple colour developed. The smell of ammonia indicated no great deterioration. There was no known reason why some samples should smell of ammonia and some of acetamide. There was no correlation of smell and colour. He had experienced no damage to punches and dies. The tablets were certainly hard but disintegration was rapid. His method of moist granulation had been to moisten with starch mucilage and carefully dry. He had found that ethylenediamine reacted with sugars, the colour developing within a day or two. A better solubilising agent for theophylline would be a good thing. He pointed out to Dr. Hartley, however, that aminophylline was used as a respiratory stimulant as well as a diuretic. There might not be much loss of activity with discoloration, but pharmaceutically it was very bad.

The second paper was:—

### Rubber as a Closure for Containers of Injections

#### I. Factors Affecting the Absorption of Phenol

W. T. WING

RUBBER closures are used extensively to seal containers of injectable solutions and they are composed of rubber of widely differing compositions. The British Pharmacopoeia 1953 does not define any controlling chemical tests or physical standards for the type of rubber, particularly in limiting its physical variation or chemical reactivity with the ingredients of the injections into which it comes into contact. McGuire and Falk have shown that phenol is absorbed by rubber caps on prolonged storage and Berry has noted the amount of chlorocresol withdrawn from solution by rubber caps. The writer has employed, and here describes a method for the estimation of phenol using Folin-Ciocalteu reagent. For the investigation described a number of rubbers have been chosen, mainly from commercial sources. Four tubes containing 7.5 cm. of rubber tubing were immersed in 15 ml. of 0.5, 1, 2 and 4 per cent. solutions of phenol together with four tubes containing phenol solutions only. These were placed in a refrigerator at 2° C. Five sets of eight tubes were set up, each containing 5 cm. of rubber tubing and immersed in 10 ml. of 0.5, 1, 2, 4 and 7.5 per cent. solutions of phenol.

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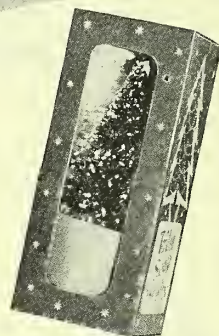
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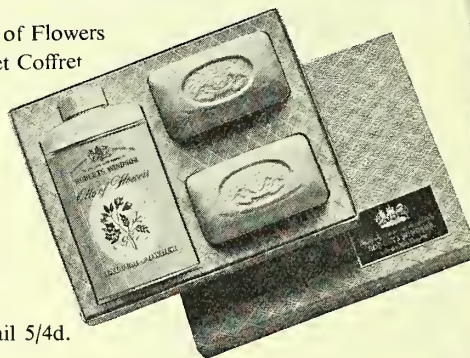
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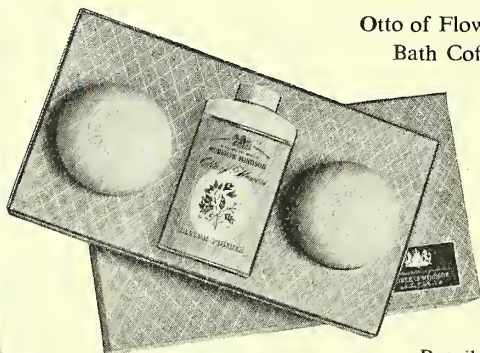
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## BRITISH PHARMACEUTICAL CONFERENCE, ABERDEEN, 1955

Five sets of each of the phenol solutions were similarly prepared. All tubes were flame-sealed and placed in an incubator at 37° C. Measured volumes were removed at intervals and the phenol content of the solution determined. Tables are given showing the amount of phenol which was absorbed by the rubber after increasing periods of time. Further experiments were conducted to determine to what extent that process was reversible. The results obtained in the examination of one sample of rubber tubing were extended to other rubbers to see whether the absorption process followed a common pattern. The results showed a close comparison with the rate of phenol absorption by the first sample. It was shown that in the case of each rubber the amount of phenol absorbed was constant when in contact with the same strength of phenol solution; and was almost directly related to the concentration of the phenol solution; the process was reversible and proceeded to a point of equilibrium whether the rubber was receiving phenol from phenol solution or transmitting it to water, and the rate of absorption of phenol increased with temperature. The phenol content of the aqueous solution in contact with each rubber showed a high degree of uniformity between the two samples examined, pointing to a uniform distribution of phenol between water and rubber when the conditions of storage remain constant. It was decided to examine all solutions, after being stored in contact with rubber to determine whether phenol absorption could be related to the alkaline reaction of the rubbers. It was shown that, although the pH alteration of solution to the alkaline side in some cases bore a relation to phenol absorption, it was by no means consistent.

Rubber samples were autoclaved to determine whether phenolic substances were transferred to the water, and whether that had any direct relationship to phenol absorption. The amounts did indicate the possibility that phenolic substances used in manufacture had increased the phenolic absorption.

The reactions have also been considered in relation to the amount of rubber in the rubber mixes. It appears that the process is consistent for particular rubber mixes, to the extent that a partition coefficient can be determined. It is suggested that the partition coefficient of phenol, for rubber in contact with aqueous solutions, under definite conditions of concentration and temperature can be used as a basis for the selection of rubber used for pharmaceutical purposes.

From the Pharmaceutical Department,  
Newcastle General Hospital.

### Discussion

MR. G. SYKES, Nottingham, said the absorption of any preservative in rubber consisted of two phases, absorption on the surface, and then diffusion through the body of the rubber. He questioned whether one rubber could be used as a standard, because it had been suggested that makers could not guarantee a constant mix between one batch and another of the same rubber. The rubber used by Mr.



Mr. H. Williams, Reading, and Mrs. Williams (president, National Association of Women Pharmacists) talk over a point that seems to cause a little anxiety to the president of the Pharmaceutical Society (Mr. H. Steinman).

Wing had been totally immersed, but the Pharmacopœia inferred that one was using a rubber cap with phenol solution on one side and air on the other, so that the rubber was virtually never saturated because of the continuous diffusion taking place.

MR. F. G. FARRELL, Chelsea, said the same problem had been studied at Chelsea on chlorocresol. Using silicone rubber, equilibrium was reached in a few days, but with rubber caps in multi-dose containers, not for many weeks. By the B.P. storage method, caps were still taking up chlorocresol after four months. The surface area exposed was an important factor. What diameter rubber tubing had been used?

PROFESSOR H. BERRY, London, said the British Pharmacopœia was only interested in rubber as a closure for containers, and such rubber should not contain fillers. Obvious factors affecting phenol absorption were the area exposed, and the presence of other substances in the solution. The partition co-efficient would vary according to the medicament contained. Regarding silicone rubbers, they did absorb phenol, and also, when they were punctured with a needle, the hole did not close. They were "utterly useless" as a material for closing multi-dose containers. He did not think absorption of phenol was a hazard, but they had little information regarding the effect of rubber on potent medicaments.

MR. T. D. WHITTET, London, said he was interested in the absorption of metabisulphite by rubber; he had found that the cap was bleached by it, but the inside of the rubber was not affected. Experiments on it by Dr. G. E. Foster and himself had given variable results.

MR. L. SAUNDERS, London, questioned the author's loose use of the word equilibrium in connection with results at 2°C. Had the author tried to calculate the diffusion co-efficient for phenol/rubber?

MR. WING, replying, said that the

experiments had been done under closed conditions deliberately, his intention being to establish the conditions under which phenol was absorbed and not to apply the work to practical uses. Phenol was diffused through rubber closures into the air. He had not meant that one rubber could be used as a standard. He was about to examine the British Pharmacopœia method of storage more closely. There was a possibility of rubber absorbing too much phenol by boiling in twice the strength of phenol contained in the injection solution. He had done no work on chlorocresol; there was possibly a difference between what happened with that and with phenol. Rubber reacted differently with different substances, e.g., with chlorine and with sulphites, when it only reacted on the surface. He would agree that fillers should not be present in rubbers used as closures for containers. Silicone rubber absorbed less phenol than any other kind, but on repeated sterilisation it appeared that silicone rubbers gave off toxic substances. Sulphite absorption was a surface reaction only. He had not dealt with diffusion co-efficients.

The next paper was read by MR. V. WALTERS. It was:—

### Bacteria in Solutions of Phenols

#### I. *Bact. coli* in Benzylchlorophenol

H. S. BEAN and V. WALTERS

THE authors examine whether a correlation exists between the mortality of certain bacteria in an aqueous system and the amount of material with a maximal ultra-violet absorption at a wavelength of 260 mμ released from the cells. The organism selected was *Bacterium coli* and the bactericide used in the experiments was benzylchlorophenol (5-chloro-2-hydroxy diphenylmethane). When viable counts were made at intervals on suspensions of *Bact. coli* stored in distilled water there was a gradual decline in the number of living organisms and a simultaneous gradual appearance in the supernatant of material which has a maximal ultra-violet absorption at a wavelength of 260 mμ. Suspensions of *Bact. coli* at a concentration of 2000 x 10<sup>6</sup> organisms per mil were prepared in phosphate buffer solutions (pH 7.0) containing 10, 25, 50 and 100 microgm. of benzylchlorophenol per mil respectively. The benzylchlorophenol absorbed by the cells from the solutions at the four concentrations used was 28, 30.4, 32 and 28 per cent. respectively of the amount initially present in the solutions. In the solutions containing 10 and 25 microgm. per mil of benzylchlorophenol there was a steady decline in the number of survivors with time, and in the solution containing 100 microgm. per mil a very rapid decline in the number of survivors. In the solution containing 50 microgm. per mil of benzylchlorophenol the percentage survivors after five to seven hours was between 0.002 and 0.008. During the following few hundred hours a 50- to 500-fold increase in the number of living cells was observed. The peak at 282 mμ in the absorption spectra of supernatants after treatment of *Bact. coli* with solutions containing

## BRITISH PHARMACEUTICAL CONFERENCE, ABERDEEN, 1955

50 microgm. per mil of benzylchlorophenol for contact times up to 653 hours showed a sharp fall immediately after the addition of the organisms to the solution due to removal of benzylchlorophenol from the solutions by the bacterial cells. With continued incubation of the cells in the solution of benzylchlorophenol the extinction at 282  $m\mu$  gradually increased and ultimately became greater than the initial density due to the benzylchlorophenol. That increase in the amount of 282  $m\mu$ -absorbing material is attributed to material released from the bacterial cells upon treatment with benzylchlorophenol. Absorption spectra also showed that simultaneously there was a marked increase in the absorption at 260  $m\mu$  due to material being released from damaged or killed bacterial cells. The release of 260  $m\mu$ -absorbing material was observed in each of the four concentrations of bactericide used, and in each concentration the extinction at 260  $m\mu$  was considerably higher than that obtained after similar time intervals from cells which had been suspended in distilled water. In view of the multiplication following treatment with benzylchlorophenol 50 microgm. per mil the possibility of cellular release materials functioning as a nutrient material was investigated. The cell-eluate was obtained by storage of *Bact. coli* in distilled water and also by maintaining at a temperature of 100° C. for 1 hour. The results indicated that materials released into the suspending fluids when *Bact. coli* die are capable of promoting cell-growth. When a small inoculum of organisms is added to the cell-eluate and incubated, a typical growth curve is obtained. It is thus possible that the leakage of material from *Bact. coli* when treated with benzylchlorophenol 50  $\mu\text{g./ml.}$ , is a contributory factor in the multiplication of the surviving organisms. Similarly, the reduction in mortality rate with time, of many organisms when treated with bactericides, may be in part due to cellular release materials in sub-optimal nutrient concentrations.

From the Pharmaceutics Laboratories, School of Pharmacy, Chelsea Polytechnic, London, S.W.3.

#### Discussion

DR. K. R. CAPPER, London, said that he would be interested to know something of the character of the survivors. That material could be released from the cells to support growth was not surprising but that growth could occur in the presence of a lethal concentration of bactericide showed that the survivors had some cultural characteristics different from those of the original organism. Had any work been done to find whether the resistance could be inherited or whether the survivors were different from the original culture. It might be well if the medium used was synthetic and not the one used in the experiments, which was a more difficult medium to investigate.

MR. G. SYKES, Nottingham, thought that Gale's fundamental work on the rôle of glutamic acid and the prevention of diffusion of that substance in the presence, a bactericidal agent

should have been mentioned. He agreed with Dr. Capper that it was difficult to believe that the phenomenon could be more than slightly responsible for the results described. There was always some resistance by bacteria. It was difficult to associate the phenomenon described with the phenomenon of adaptation.

MR. H. D. C. RAPSON, Dorking, thought that the authors had made a mistake in putting the  $x$  axis as the initial concentration in their absorption isotherm. He had calculated from the authors' figures a different curve and from that found the effective area of the bacteria and worked out the approximate area of the bactericide molecule on the surface to be 20 Å<sup>2</sup>. The implication was that there was a single layer of bactericide on the surface and he suggested that death might be due to a sort of asphyxiation. He thought that there might be some connection between that effect and the abnormal behaviour noted by the authors at 50  $\mu\text{gm. per mil.}$  Mr. Rapson suggested that those bacteria that were killed received bactericide on their surface and inside. The survivors, on the other hand, only received a small amount of bactericide.

DR. G. E. FOSTER, Dartford, said that the liberation of 260 m.u. absorbing substance had been observed in the presence of antibiotics. The authors had skated over the nature of the substance released.

DR. A. H. BECKETT, London, said that the measurement of absorption must be looked upon as very approximate due to the release of so many substances. He hoped that it would be possible, in the future, to get accurate figures of absorption by the cell and the release of those substances.

MR. WALTERS said that no work had been done on the characteristics of the surviving organisms to see whether there was any acquired resistance. A reference should have been made to the work of Gale. The absorption isotherm curve should not have been expressed as the initial concentration. He had no personal knowledge of the nature of the substances released. He understood that they were principally purines and pyrimidines. Using the Morton Stubbs connection, the values obtained for the percentage absorption were roughly 10 per cent. higher than by the method used.

DR. BEAN said that the reason for the paper had been to show that the last survivor theory might not be wholly true.

The next paper was read by MR. E. KAY. It was:—

#### Activity of Mixtures of Antibacterial Substances

E. M. BAVIN, E. KAY and D. SIMMONITE  
DURING an investigation of the possibility of preparing an improved general antiseptic, the use of mixtures of known antiseptic substances was considered. Experiments showed that a number of quaternary ammonium compounds and other antiseptics examined, domiphen bromide was the most antibacterial, and confirmed the stability of 5-aminoacridine in the presence of soap and protein. The

mixture of the two substances was stable over a wide range of temperatures and possessed the high bacteriostatic and bactericidal activity characteristic of domiphen bromide. In normal circumstances, the small amount of 5-aminoacridine present did not contribute much to the high antibacterial activity of the domiphen bromide in the mixture, but in the presence of high concentrations of soap and protein, 5-aminoacridine maintained the activity of the mixture at a high level by superimposing its own unimpaired activity on the reduced activity of the quaternary compound. Of a number of antiseptics examined, it was confirmed that a mixture of 1.0 per cent. of domiphen bromide and 0.1 per cent. of 5-aminoacridine possessed high antiseptic activity which was largely retained in the presence of large concentrations of soap or protein. Preliminary results suggest that the mixture of antiseptics delays the development of bacterial re-extent than domiphen bromide alone.

From Smith and Nephew Research, Ltd., Hunsdon Laboratories, Ware.

#### Discussion

MR. G. SYKES, Nottingham, said that although the effect of the domiphen bromide might not be reduced by 5-aminoacridine, the effect of the 5-aminoacridine was diminished by the domiphen bromide.

MR. R. LEVIN, Liverpool, said the time had come for a real appraisal of bactericidal solus. The ideal bactericide must be quick, non-toxic and effective in presence of organic materials.

(To be continued)



The convener of the local publicity committee (Mr. R. J. Cowie) imports the Highlands into the Beach Ballroom. With him is Mrs. Cowie.

## TRADE REPORT

The prices given are those obtained by importers or manufacturers for bulk quantities or original packages. Various charges have to be added whereby values are in many instances augmented before wholesale dealers receive the goods into stock. Crude drugs and essential oils vary greatly in quality and higher prices are charged for selected qualities.

LONDON, AUGUST 31: During the week the markets continued to be influenced by the holidays, and buying interest was practically absent in most sections. CRUDE DRUGS and ESSENTIAL OILS, however, retained their firmness, the position being assisted by the low stocks held in London.

As a result of cheaper raw materials and assisted by Continental competition CAFFEINE and THEOBROMINE prices were reduced. Both CAFFEINE ALKALOIDS were one shilling per lb. down and the SALTS sixpence down. THEOBROMINE ALKALOID was reduced by 2s. per lb. and its SALTS by one shilling.

Good quality MYRRH has become scarce on the spot, some difficulty having been experienced lately in getting supplies from origin. SAFFRON and CALUMBA were reported to be cleared on the spot. Also in short supply was high-testing CINCHONA druggists' bark. Chinese MENTHOL rose sharply at origin, but the sellers here did not follow the rise to anything like the same extent. With the crop nearing the end GENTIAN was marked up by 5s. to 10s. per cwt. Whilst there were no direct shipment offers of SENEGA, secondhand sellers appeared on the market. BUCHU was up by sixpence per lb. on the spot and ARECA NUTS by 15s. to 20s. per cwt. for shipment. PIMENTO supplies have been cleared on the spot.

Lower per lb. in ESSENTIAL OILS were ANISE (by three-halfpence) and Penang PATCHOULI (by 1s. 6d.). Bourbon GERANIUM was firmer by 5s. per lb. on the spot and Mysore SANDALWOOD by a similar amount. CITRONELLA prices also tended to rise.

### Pharmaceutical Chemicals

AMPHETAMINE.—Prices (per kilo) for 25-kilo lots are as follows:—BASE, 160s.; SULPHATE, 130s.; *D*-Amphetamine, 550s.

CAFFEINE.—Lower. For 1-cwt. lots, ALKALOID, B.P. is 21s. 9d. per lb.; ANHYDROUS ALKALOID, 22s. 9d.; and CITRATE, 14s. 3d. SODIUM IODIDE, 24s. 9d.

DICOPHANE (DDT).—Prices are as follows:—1-cwt. lots, 3s. 1d. per lb.; 1-ton, 2s. 10d. Discount for larger quantities.

EMETINE.—Price for 32-oz. lots of the HYDROCHLORIDE is 250s. per oz. The BIS-MUTH IODIDE is 125s. per oz.

ERGOTOXINE ETHANESULPHONATE.—Price per gm. for B.P.C. (1949) is: 1 gm., 168s. 9d.; 10gm., 155s. 3d.

ETHER.—Prices (per lb.) in winchesters are as follows:—TECHNICAL, B.S.S., and SOLVENT, 5-cwt., 2s. 5d.; 10-cwt., 2s. 4d. ANÆSTHETIC, B.P., 5-cwt., 3s. 10d.; 10-cwt., 3s. 9d. In drums prices are 4d. per lb. less than above.

HYDRAZINE HYDRATE.—Price per ton is £153 for the 10 per cent. (w/v) solution and £33 for the 2½ per cent.

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IRON ...	13 3	12 9	12 3
MAGNESIUM ...	10 4	9 11	9 6
MANGANESE ...	13 6	13 0	12 6
POTASSIUM ...	8 7	8 2	7 9
SODIUM ...	7 1	6 8	6 3

PARAFFINS.—Prices to wholesale distributors are:—Liquid: HEAVY, B.P., £100 17s. 6d. per ton; LIGHT, B.P., £83;

Technical White oils, £70 10s. for the LIGHT and £84 for the medium, all in 40–55 gall. returnable loaned drums, delivered U.K. Soft: WHITE, medium consistency, £94 15s. per ton; WHITE, soft consistency, £92 10s., and YELLOW, £72 10s., all B.P., in non-returnable drums delivered. Hard: Melting point 135/140° F. is £84 12s. 6d. and 145/150° F., £85 12s. per ton, in minimum 1-ton lots.

POTASSIUM BICARBONATE.—B.P. powder is 110s. per cwt. for 1–4-cwt. lots and 105s. per cwt. for 5-cwt. and over.

THEOBROMINE.—Alkaloid 31s. 9d. per lb. for 1-cwt. lots and the SODIUM SALICYLATE, 19s. 9d. per lb.

### Crude Drugs

ALOES.—Prime Cape for shipment is 260s. per cwt., c.i.f. Spot value is about 295s.

ARECA NUTS.—Quotations are about 40s. per cwt. for Ceylon material on the spot. Shipment, 40s. to 45s., c.i.f., as to sellers.

BUCHU.—Rounds on the spot are 6s. 6d. per lb.; no shipment offers.

CASSIA BARK.—Whole on the spot is about 90s. per cwt., in bond, and for forward delivery, 80s., c.i.f. Broken, 75s., in bond, and 67s. 6d., c.i.f.

CHAMOMILE.—Belgian flowers are 5s. 3d. per lb. on the spot.

CHILLIES.—Mombasa spot supplies offered at 380s. per cwt. Shipment, 345s., c.i.f.

CINCHONA.—High-testing druggists' bark is short on the spot. A parcel of Tanganyika testing t.a., 5–75 per cent.; s.q., 2–11 per cent.; cinchonidine 1–27 per cent., is 1s. 4d. per lb. Belgian Congo *Succirubra*, t.a., 9 per cent., 2s. landed, prompt from Continent.

GENTIAN.—Firmer. French natural on the spot is from 110s. to 115s. per cwt. as to holder.

GINGER.—African is valued on the spot at 270s. per cwt., and shipment at 265s., c.i.f. Jamaican No. 3 is 375s. on the spot.

IPECACUANHA.—Quiet. Spot offers include Matto Grosso at 64s. per lb. and Colombian at 63s. Nicaraguan is being offered for September–October shipment, 69s., c.i.f.

JALAP ROOT.—Vera Cruz, powdered, is offered at 4s. 6d. per lb. Brazilian, 12–4 per cent., is quoted at 1s. 10½d. Mexican is unobtainable spot and forward.

KARAYA.—No. 1 gum on the spot is quoted at 340s. per cwt., and No. 2 at 290s.

LIQUORICE.—Quotations for Anatolian are 70s. per cwt.; Russian, 65s.; Persian is offered at 43s. to 45s. per cwt. as to quantity, for spot supplies. Block juice quotations are 220s. per cwt., on the spot. Italian stick from 310s. to 475s. per cwt., duty paid.

LYCOPodium.—Russian triple-sifted is 6s. per lb., in bond.

MENTHOL.—Chinese is firmer at origin. The price from China is 54s. 3d., c.i.f., but spot is available at 53s., in bond.

MERCURY.—Nominal spot value is £90 to £95 per flask of 76-lb. ex warehouse.

MYRRH.—Aden selected sorts are short on the spot with £16 per cwt. now asked. Siftings are from £7.

SEEDS (per cwt.).—ANISE.—Cyprian, 270s.; Tunisian, 265s.; duty paid, spot London. CARAWAY.—Dutch are unchanged at 152s. 6d., duty paid, with no business reported at that figure. CELERY.—Indian is offering at 140s., spot. CORIANDER.—Firm. Spot, Morocco nominal at 95s., duty paid, Danubian or Rumanian quoted at 75s., duty paid, and 70s. in bond. All splits have been sold. CUMIN.—Market steady with small business. Spot, Cyprian, 130s., and Iranian, 122s. 6d., duty paid. New crops, Cyprian is now quoted at 120s., c.i.f., for prompt shipment. DILL.—Indian in poor demand with sellers quoting 65s. spot. FENNEL.—Indian offering at 85s., spot London. FENUGREEK.—Market firm with 65s., duty paid, quoted. MUSTARD.—English, 70s. to 82s. 6d., according to quality.

SENEGA.—Second-hand sellers for shipment at about 20s. 6d., c.i.f. Spot value is about 22s. per lb.

### Essential and Expressed Oils

ANISE.—Chinese is quoted at 19s. per lb. on the spot and 18s. 7½d., c.i.f.

CADE.—Spanish is about 2s. 3d. per lb. on the spot for 1-cwt. lots.

CAJUPUT.—Spot supplies are 15s. 6d. per lb. for 1-cwt. lots.

CAMPOR, WHITE.—Chinese is 2s. 9d. per lb., duty paid.

CINNAMON.—From quillings, English distilled is quoted at 30s. per oz. Other B.P. oils available down to 90s. per lb. Ceylon leaf, 12s. 6d. per lb., spot.

CITRONELLA.—Ceylon is 6s. 9d. per lb. on the spot and 6s. 9d., c.i.f.; Formosan spot is 13s. 6d., c.i.f., nominal and 14s. on the spot. Java type is not quoted.

CLOVE.—Madagascar leaf is 10s. 3d. per lb., duty paid and 8s. 9d., c.i.f., for shipment. Rectified, 87–88 per cent., 14s.; distilled bud oil, English, from 35s.; imported, 18s. 6d. to 19s. 6d.

GERANIUM.—Bourbon is firm at 95s. per lb. on the spot.

LEMONGRASS.—Shipment at 9s. 9d., c.i.f., September–October; and spot, 10s. 9d.

LIME.—Supplies of West Indian distilled are offered from 37s. 6d. per lb. on the spot and 34s., c.i.f.

PEPPERMINT.—*Arvensis*: Chinese is steady at 34s. per lb. on the spot and 33s., c.i.f. Brazilian, 32s., spot, and 31s. 6d., c.i.f. Italian "Mitcham"-type oil is from 65s. to 80s., spot, and American, 56s. to 58s. and 47s. 6d., c.i.f. August–September shipment.

SANDALWOOD.—Mysore is 100s. per lb. on the spot. Very scarce.

### UNITED STATES REPORT

NEW YORK, AUGUST 30: Refined NAPHTHALENE in ball and flakes for wholesalers advanced by 1½ cents to a new price of 15½ cents per lb. Spot sales of CRUDE DRUGS picked up somewhat on reports of some drought damage. Higher per lb. among ESSENTIAL OILS were Algerian GERANIUM at \$12.75 (up 50 cents); Puerto Rican BAY at \$2.50 (15 cents); and Ceylon CITRONELLA, \$1.25 (10 cents). Lower per lb. were Dominican BAY at \$1.90 (down 35 cents), and LEMONGRASS, \$1.75 (five cents).

# C. & D. WEEKLY LIST OF PRICES

A=Advanced; R=Reduced; I.R.P.=Inclusive Retail Price; \*Tax 25 per cent.

## ALL DISTRIBUTORS OF UNBRANDED ANTIBIOTICS (according to packs issued).

	Each	Box of 5	Box of 10
0.5 mega unit	1 4½ R	6 10½ R	
1.0 mega unit	2 0 R	10 0 R	20 0 R
2.0 mega units	3 3 R		32 6 R
5.0 mega units	7 6 R		
10.0 mega units	12 6 R		

Procaine penicillin G oily injection	10-dose vial	7 1½ R
Veterinary penicillin granules	8-oz. tin	12 6 R
	(12s, 9d, in Eire)	

Streptomycin sulphate, Streptomycin sulphate stabilised, and Dihydrostreptomycin sulphate

1.0 gm.		
(1 mega unit)	2 6 R	12 6 R
5.0 gm.		
(5 mega units)	10 0 R	

## BOOTS PURE DRUG CO., LTD.

Pro-Stabillin oily		
3 mega units	10 c.c.	7 1½ R
Pro-Stabillin (for aqueous suspension)		
3 mega units	10 c.c.	6 0 R

Bi-Stabillin		
0.4 mega unit	Single	1 6 R
	Box of 10	15 0 R
1.2 mega units	Single	2 10½ R
	Box of 10	28 9 R

Viules of procaine penicillin G		
0.3 mega unit	6	9 0 R
	100	144 0 R
0.6 mega unit	6	12 0 R
	100	194 0 R
0.9 mega unit	6	15 9 R
	100	256 6 R

Viules of streptomycin sulphate		
1.0 gm.	6	15 0 R
	100	244 0 R

## BRITISH COD LIVER GRIMSLEY, LTD. (from United Kingdom only.)

	Doz.	I.R.P.
Sevenses cod liver oil, B.P., standard	4 oz.	15 9
	8 oz.	24 9
	16 oz.	42 9
capsules	25	16 0
	50	26 0
	100	48 0
	250	90 0
	500	140 0

## BURROUGHS WELLCOME & CO.

Tabloid brand penicillin oral		
100,000 units	Tube of 10	2 9 R
	Bottle of 100	20 9 R
200,000 units	Tube of 10	3 1 R
	Bottle of 100	23 0 R
500,000 units	Tube of 10	6 6 R
	Bottle of 100	55 6 R

## DISTILLERS CO. (BIOCHEMICALS), LTD.

(Distributors: Allen & Hanburys, Ltd.; The British Drug Houses, Ltd.; Burroughs Wellcome & Co.; Evans Medical Supplies, Ltd.; Imperial Chemical (Pharmaceuticals), Ltd.; and Pharmaceutical Specialities (May & Baker), Ltd.)

Distafeed penicillin supplement		
1 lb.		2 6 R
10 lb.		21 8 R
50 lb.		83 4 R
Distaquaine G		
0.9 mega unit		2 3 R
3.0 mega units		6 0 R

Distaquaine fortified		
0.4 mega unit		1 6 R
1.2 mega units		2 10½ R
4.0 mega units		7 6 R

Distaquaine suspension		
3.0 mega units	10 mls	7 1½ R
Distaquaine suspension veterinary		
9.0 mega units	30 mls	19 4½ R

Distavone		
1.0 mega unit		2 6 R
single-dose vial		
Distivit B <sub>12</sub> ampoules		
20-microgm.		2 1½ R

50-microgm.		2 9 R
5-ampoule box		4 0 R
100-microgm.		
5-ampoule box		19 0 R
1,000-microgm.		
5-ampoule box		
Mixtamycin		

1.0 mega unit  
5.0 mega units

## GLAXO LABORATORIES, LTD.

Crystapen oral liquid (200,000 international units per drachm) 2-oz. bottle  
Crystapen oral tablets (coated and uncoated) 200,000 units per tablet

	12	3 7½ R
	100	23 0 R
	500	109 0 R

400,000 units per tablet	12	6 1½ R
	100	44 0 R
	500	214 0 R

Benapen aqueous suspension

10-dose vial

Crystapen sodium penicillin

0.1 mega unit 10-vial box

0.2 mega unit 10-vial box

0.5 mega unit 10-vial box

\* 1.0 mega unit 10-vial box

2.0 mega-units Vial

\* 5.0 mega units Bottle

\* 10.0 mega-units Bottle

\* Buffered and unbuffered.

Estopen

100,000 units Box of 10

500,000 units Box of 10

Mylipen 10-dose vial

Prolophen 10-dose vial

Seclophen Box of 10 doses

5-dose vial

Crystapen ointment

½-oz. tube

High-potency Crystapen

ointment 1-dr. tube

Mylipen cream ½-oz. tube

Crystamycin

Box of 10 doses

Estomycin

Adult Box of 10

Infant Box of 10

Mystrepton ointment

½-oz. tube

Seclomycin Box of 10 doses

Dimycin and Streptolipin solutions

Box of ten 1-gm. vials

5-gm. vial

Dimycin solution 33½%

veterinary pack

30-c.c. (10-gm.) bottle

Veterinary Mylipen

30-c.c. bottle

Streptovex 8-oz. bottle

Streptopen uterine tablets

500 Tube of 6

250 Tube of 6

Antibiotic preparations not listed are unchanged in price. The changes apply also in Eire.

## IMPERIAL CHEMICAL (PHARMACEUTICALS), LTD.

Avlon crystalline penicillin

G sodium salt

0.5 mega unit

1.0 mega unit

2.0 mega units

5.0 mega units

10.0 mega units

Avlon penicillin G (potassium salt), buffered

1.0 mega unit

5.0 mega units

10.0 mega units

Avlon penicillin G (sodium salt), buffered

5.0 mega units

10.0 mega units

Avloprocil procaine penicillin G oily injection

(300,000 units in 1 c.c.)

with aluminium stearate

10-c.c. bottle

Avloprocil A.S. crystalline penicillin procaine salt

aqueous suspension (300,000 units in 1 c.c.)

5-c.c. bottle

10-c.c. bottle

Avloprocil N.A. procaine penicillin injection fortified

0.4 mega unit

4.0 mega units

Avloprocil dry procaine penicillin G, B.P., dispersible powder

0.9 mega unit

3.0 mega units

Penavlon penicillin tablets

200,000 units Tube of 10

Bottle of 100

500,000 units Tube of 10

Bottle of 100

## JEYES SANITARY COMPOUNDS CO., LTD.

(from October 3)

Jeyes' fluid

5 oz.

11 3

1 3 A

10 oz.

16 6

1 10 A

quart.

45 0

5 0 A

Each

11 3

15 0 A

gallon can

Doz.

9 9

1 1 A

Jeypine

6 oz.

12 oz.

18 0

2 0 A

20 oz.

27 0

3 0 A

## ELI LILLY & CO., LTD. (from September 5)

Duracillin A.S. 10-c.c.

ampoule

7 1½ R

## POND'S EXTRACT CO., LTD. (from September 1)

Vanishing cream small jar

medium

small tube

large

1 6 A

2 9 A

1 6 A

2 6 A

3 0 A

5 6 A

1 6 A

2 6 A

3 6 A

1 6 R

Angel face

Freshener pads

## PARKE, DAVIS & CO., LTD.

Antuitrin growth

20-c.c. vial

36 0 A

Chloromycetin

capsules, 0.25 gm.

12

21 3 R

100

169 3 R

1,000

1,634 0 R

tube

6 0 R

cream

8 oz.

39 6 R

endodontic compound,

cartridge

11 9 R

intramuscular 2-gm. vial

ophthalmic

vial with dropper

palmitate, suspension,

60 c.c.

16 0 R

pure

5 gm.

32 0 R

25 gm.

158 3 R

100 gm

590 0 R

suppositories

0.25 gm. box of six

tincture 10 per cent.

15 9 R

(veterinary)

2 fl. oz.

29 3 R

16 fl. oz.

195 0 R

car drops (topical 10 per cent.)

5 c.c.

8 3 R

100 c.c.

99 6 R

topical, 5 per cent.

15 c.c.

11 0 R

Chlorstreptin capsules

12

18 6 R

The price of Chloromycetin ophthalmic ointment is unchanged.

Folic-acid tablets (CT 826)

25

4 3 R

5-mgm.

100

15 3 R

PFIZER, LTD. (from September 5)

Pfizerpen four

0.5 mega unit

11 R

1.0 mega unit

1 4 R

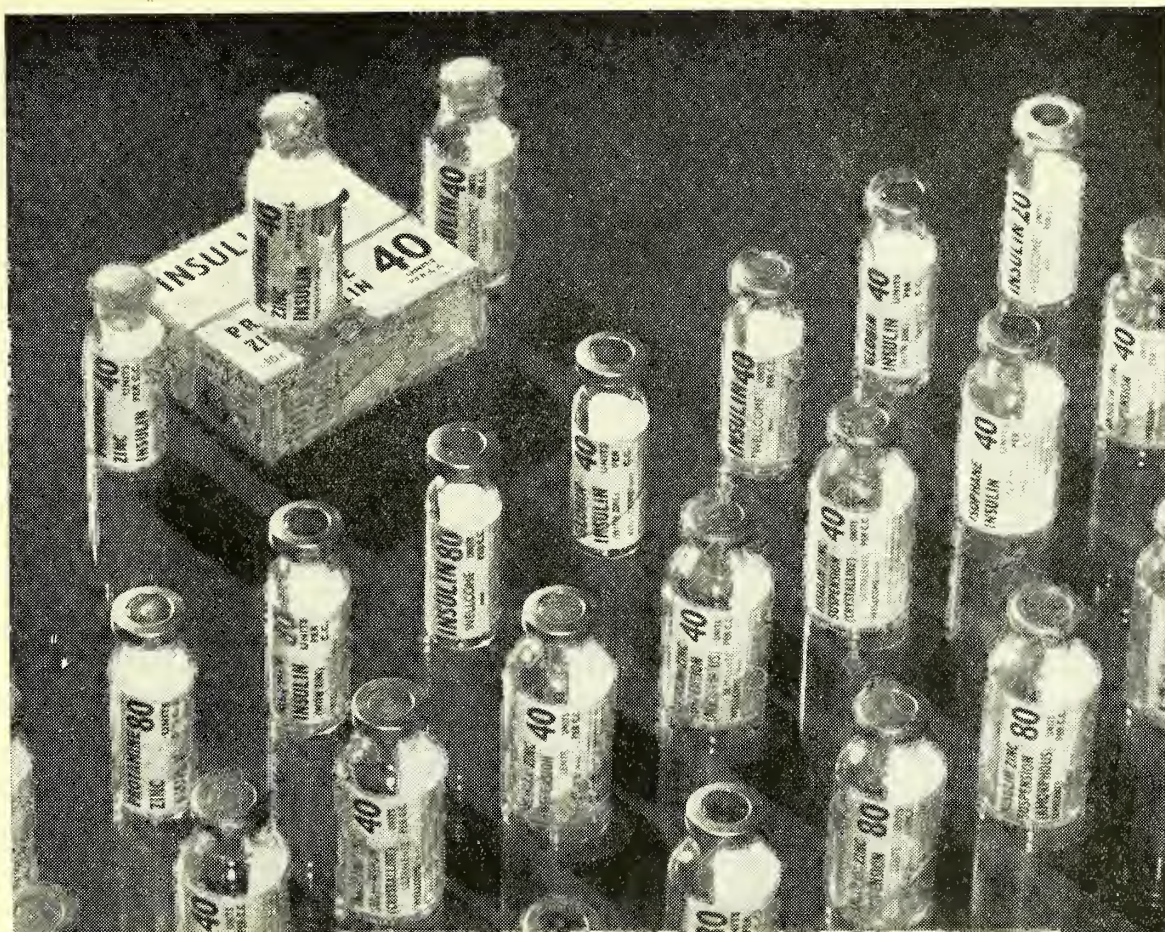
Combiotic

0.5 gm.

1 8 R

Combistrep

1.0 gm.



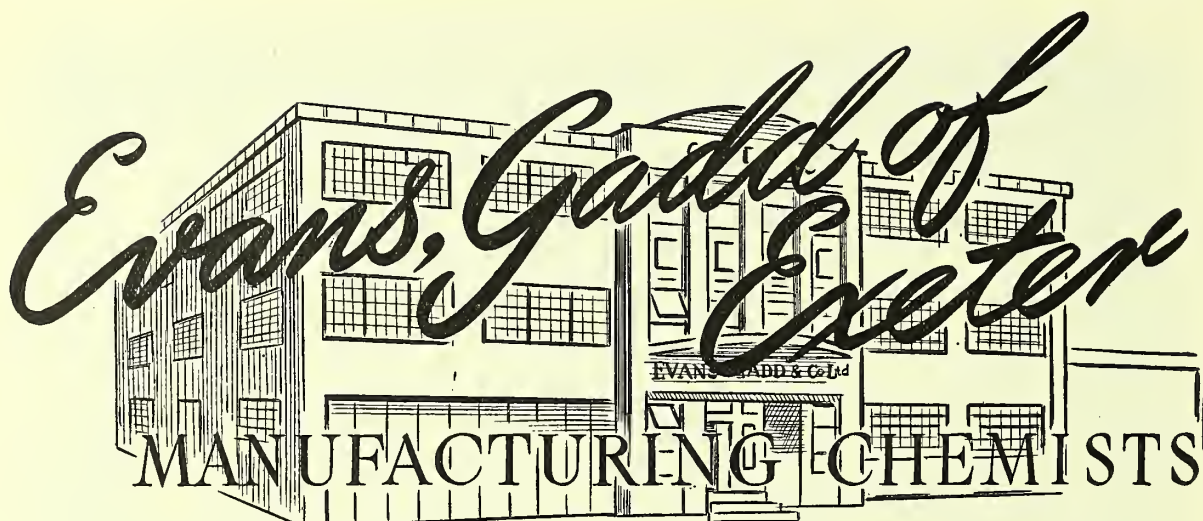
## All present and correct ...

Whatever type of insulin is prescribed, you know that you can confidently dispense the appropriate 'Wellcome' preparation. Unvarying in purity and precise in strength, the 'Wellcome' range includes the three Lente-type Insulins as well as 'Wellcome' Insulin, 'Wellcome' Globin Insulin, 'Wellcome' Protamine Zinc Insulin and 'Wellcome' Isophane Insulin (N.P.H.).

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Drugs, Galenicals, Packed Goods and Sundries  
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packed in  
AUSTRALIA**

Australia's high standard of living makes it a rich market for proprietary lines — chemists' lines, cosmetics, groceries, horticultural and veterinary products etc. To avoid difficult import restrictions, and freight and insurance costs, many manufacturers are now having their goods prepared and packed in Australia.

Since 1888

Simpson's Manufacturing Pty.  
Ltd., of Melbourne, Victoria

and Sydney, New South Wales, has been producing articles of this kind since 1888. They now list over a thousand clients from all parts of the world. Clients' specifications are faithfully followed and utter secrecy is observed. Distribution, marketing and advertising facilities in all states are available if required.

Further details and quotations will be gladly given without obligation.

**SIMPSON'S**  
SINCE 1888

Barkly Avenue, Burnley, Melbourne, E.1., Victoria, Australia.

**A**UTUMN, when the leaves are brown,  
Take pen and ink and write it down,  
said **HUMPTY DUMPTY**



That might be the Doctor's motto at the moment: his pad of E.C.10 forms is diminishing as the autumn harvest of bronchitis sufferers grows. Many of the forms will stipulate Riddell Products—especially those mentioned below: check your stocks now!

### RIDDOSPAS SUPPOSITORIES

A combined dimethylxanthine preparation, consisting of the two isomers Theobromine and Theophylline, and exercising a very powerful spasmolytic and vasodilative effect. Gastric disturbances attendant on oral administration are eliminated by this form of rectal medication, which greatly facilitates expectoration but causes no by- or after-effects or habituation.

### RIDDOVYDRIN

Epinephrine combined with Vitamin C produces an entirely new compound due to chemotherapeutic synergism, which is eminently suitable for the inhalation treatment of any respiratory condition associated with difficult breathing: asthma, emphysema, catarrh, bronchitis. It should be atomised by a suitable RIDDELL INHALER.

### RIDDELL INHALERS

The curative effect of any Inhalation Treatment increases in ratio to the degree of fineness of the atomisation of the medicaments employed. RIDDELL INHALERS embody the latest scientific and technical improvements. Their wide range ensures that a suitable inhaler can be supplied for almost every condition and every patient—backed by the name of Riddell Products.

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**Telegrams: Pneumostat, Beth, London**

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**and Compounds**  
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THE ORIGINAL BRITISH ASPIRIN MAKERS

**BARNET, Herts.**

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Telephone: BARNet 0723

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HOSIERY****SEAMED. SEAMLESS.  
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ELASTIC NET.****SURGICAL BELTS  
TRUSSES AND SUNDRIES***Over 60 years' service of everything surgical***SURGICAL HOSIERY CO., LTD.****Russell Street, NOTTINGHAM**

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Telegrams: Surgical Notta

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**Solazzi  
Liquorice***A modern  
medicament in digestive  
disorders and gastric ulcers***MADE FROM PURE CALABRIAN LIQUORICE ROOT**  
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England for their new speciality**AURUBIN  
ORAL****Rubidium-Gold-Creatinine  
preparation**

with a threefold effect

For the treatment of  
rheumatic polyarthritis,  
morbus Bechterew, arthroses,  
psoriasis and  
lupus erythematosus*Literature and prospectus available at the  
above address***SURE-SELLING STOCK!**

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THE ORIGINAL

**WIDOW WELCH'S FEMALE PILLS**Over 10d BOX PROFIT by ordering 1 dozen  
4/1 size. Bonus given on every dozen (#3)  
It pays to push this size.Established 1787  
in the Reign of  
King George III**C. & G. KEARSLEY LTD.**  
71 DARTMOUTH ROAD, LONDON, S.E.31**ITONA SUGAR CANE MOLASSES**

packed in glass jars for convenience and better protection

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Keep it **DARK**  
with  
**SHADEINE**

Still the best hair tint. In all natural Shades.  
Stocked by all Wholesalers. Trade Prices:  
1-oz., 18/- per doz.; 2-oz., 29/7 per doz.  
Purchase Tax 75%. Retail prices, 3/1½ and 5/2  
per bottle respectively.

Also the new **GOLDEN SHADEINE** for lightening mousey hair. 2-oz.  
size at 18/- per doz. Purchase Tax 75%. Retailing at 3/1½ per bottle.

**THE SHADEINE COMPANY LTD.**  
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Harmless



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SALES  
ARE  
ASSURED  
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THE LOCAL ANAESTHETIC

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Local Anaesthetic Techniques.

*Further details on request*

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## CUTICURA SOAP CUTICURA OINTMENT CUTICURA TALCUM POWDER CUTICURA SHAVING STICK

There is a growing circle of discriminating people who appreciate high quality and insist on these soothing, protective, fragrant, mildly medicated Preparations, for care of the skin. Just display one each of these eye-catching firm family favourites in your attractive window, and make sure this steady all-the-year-round business comes your way.

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325



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Telephone: 28383 (5 lines)

**Of course you stock Prestoband?**

They'll all be asking! There's a minor injury in the family ... or else their supply has just run out. More and more folk are saying they *must* have Prestoband handy. They like this quickest, cleanest, healthiest dressing for wounds; this safest, most comfortable strapping. It's easy on, painless off, and no mess left behind!

Keep apace with demand (and our national advertising) and stock antiseptic, water resistant, pinless, knotless, neat and tidy Prestoband.

Generous trade terms. Packed in attractive display outers. 3 widths; 2", 1" or  $\frac{1}{2}$ " at 1/6, 9d. or 7d. a 4-yard roll.

Made by Vernons of Preston. Sole Distributors in the U.K. are Fassett & Johnson, Ltd., 86 Clerkenwell Road, London, E.C.1; and in Eire, Fassett & Johnson (Ireland), Ltd., 6 Crow Street, Dublin.

**PRESTOBAND**  
THE ANTISEPTIC SELF-ADHESIVE BANDAGE  
*\*sticks to itself, but NOT to the skin!*

**RADIO TIMES** readers  
in more than 8½ million  
homes will see this  
**EUTHYMOL** advertisement

## RADIO TIMES



The Radio Times regularly carries Euthymol advertising into more than \*8½ million homes—that is, at least every other household in your district.

Make sure you benefit from the increased sales that this powerful advertising will bring. Display Euthymol toothpaste prominently on the counter and in the window.

Let the neighbourhood know that you are the nearest stockist of Euthymol.

FOR REAL MOUTH FRESHNESS  
ALL THE FAMILY Say

*Eu...*  
*thy...*  
*mol*

When you use Euthymol toothpaste there's a tang of health in your mouth that only Euthymol can give. It not only cleans your teeth, it protects your gums and keeps your mouth clean, fresh and healthy. It is in fact the complete toothpaste. Next time ask your Chemist for EU... THY... MOL—for real mouth freshness!

**Euthymol**  
TOOTH PASTE

*For that EXTRA business, tie in with the*

# RADIO TIMES

\*CERTIFIED WEEKLY NET SALES JANUARY TO JUNE 1955, 8,832,579.

ALL ENQUIRIES TO: TOM HENN, HEAD OF ADVERTISEMENT DEPARTMENT, BBC PUBLICATIONS, 35, MARYLEBONE HIGH STREET, LONDON, W.1

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EXTRACT OF MALT  
WITH COD LIVER OIL (B.P.)  
WITH FLAVOURING

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*Distillers of ESSENTIAL OILS since 1923*

*Manufacturers of AROMATICS, PERFUME  
BASES AND FLAVOURS.*

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JUNIPER BERRY OIL,  
WINTERGREEN OIL,  
FRENCH LAVENDER OIL,  
TERPENELESS LEMON OIL,  
PEPPERMINT OILS, PERFUME  
BASES, ETC.*

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LONDON - S.W.13**

*Telephone: RIVerside 3616*

*Managing Director:  
JOHN LESLIE HINDLE, B.Sc.*

*There's no 'off-season' for*



## BOX'S

INDIGESTION PILLS

*The Old Established  
Family Remedy*

P.A.T.A. Retail Prices:

1/5, 3/4, 5/5, 13/4, 24/2 (incl. tax)

W. H. BOX, 161 KING STREET, PLYMOUTH

# TRESS Sales are mounting- week by week...

**STOCK IT...  
DISPLAY IT...  
SEE HOW IT SELLS!**

## TRESS

The new kind  
of wave-set  
that sets  
the pace  
for wave-set  
sales

TRADE PRICE  
14/4d. per doz.  
75% Tax

RETAIL PRICE  
2/8d. per bottle



SALES OF BEAUTY PRODUCTS



## TRILL

The new brush-on hair  
beautifier for dry and  
broken hair

TRADE PRICE 13/8d. per doz. 75% Tax  
RETAIL PRICE ... 2/6d. per tube



## COLORAL

HAIR COLOUR RINSE

TRADE PRICE 6/2½d. per dozen cards. 75% Tax  
RETAIL PRICE 1/2d. per card of two rinses

**GOLDEN LTD., Now at 7 GROSVENOR STREET, LONDON, W.1. HYDe Park 1671**

Trade Enquiries for the Republic of Ireland should be addressed to Lillmar Pharmaceuticals, Ltd., Santry, Dublin

GN2515A



## Our new hanging showcard

Here is our latest dispenser - showcard. Attractively printed in colour, carrying six dozen Hair Nets in transparent cellulose film envelopes beautifully printed in Blue, White and Gold.

**Will O'Wisp**  
THE LUXURY HAIR NETS

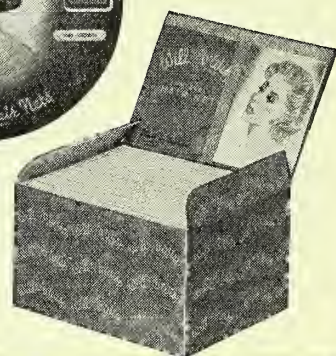
From your Wholesaler. In case of difficulty write for nearest supplier to:  
SIMON, MAY & CO. LTD., NOTTINGHAM. Est. 1849

**Fine QUALITY - plus forceful DISPLAY**

## To Show them is to Sell them...

—and to sell them is to make a regular customer! Here is a first-class product backed by a century's experience of making Nets of all kinds, and supported by attractive displays.

Stronger, finer, longer - lasting — "Will o' Wisp" Hair Nets and Slumber Nets sell on sight and repeat on quality.



# PLJ

is lemon juice...

The natural, undiluted, very pleasant juice of fully-ripened Sicilian lemons. Many thousands of women are now drinking P.L.J. regularly to keep their skin clear and fresh. Once in the home, they use it for a hundred other purposes. To make real lemonade. To dress salads. To whiten finger-nails and elbows. To rinse hair. And so on. The lemon is a versatile fruit—and anything a lemon can do P.L.J. can do better!

At 2/6 a bottle (4/- for the economy size) P.L.J. is a good purchase. That's why sales are soaring. That's why you should lay in good stocks of this regular selling line.

...in a bottle!

P.L.J. CROYDON



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FOR BOOKS

NEW, SECONDHAND AND RARE

**BOOKS**

Foyles have Departments for Gramophone Records, Stationery, Handicraft Tools and Materials, Music, Magazine Subscriptions, Foreign Stamps.

119-125 CHARING CROSS ROAD, LONDON, W.C.2

Gerrard 5660 (16 lines) ★ Open 9-6 (Thur. 9-7)

Two minutes from Tottenham Court Road Station

ESTABLISHED 1793

**ATKINSON & BARKERS**  
INFANTS' PRESERVATIVE

The Infants' Medicine  
of 150 years' standing

For teething and digestive troubles

**ROBERT BARKER & SON LTD**  
13 ALISTAIR STREET, MANCHESTER, 1



The richest natural vitamin-protein-mineral supplement, Bemax provides easily digested nutritional support for patients of all ages. Now available in two forms—Plain and Chocolate Flavoured.

	Dozen	Quantity Terms	
1/9 carton at	16/6	16/- dozen	
3/- " "	128/6	27/3 "	
5/6 " "	52/6	50/- "	

Quantity terms available on minimum order of 3 dozen x 3/- or the equivalent in the 1/9 and 5/6 sizes (1 x 3/- = 2 x 1/9 = 1/2 x 5/6).

# BEMAX

**Stabilized Wheat Germ**

## PREGNAVITE during Pregnancy

vitamin-mineral supplementation is obtained by routine administration of PREGNAVITE. It is designed with maternal dietary requirements specifically in mind.

Prices	RETAIL	CHEMISTS
60	4/1	33/4 per doz.
120	7/4	59/10 " "
1,000	48/-	32/9 each "



## VITAVEL SYRUP for the child

vitamin supplementation so palatable as to ensure regular dosage is provided by VITAVEL SYRUP.

PACK	RETAIL	CHEMISTS
6 fl. ozs.	3/9	2/6
40 fl. ozs.	24/-	16/-



**VITAMINS LIMITED**

(DEPT. A.A.5) UPPER MALL, LONDON, W.6

By **FAR** the **CLOSEST** shave  
with the Swiss

**UNIC**

at **£5.12.6**

order one TODAY from

**BUTLER & CRISPE LTD**

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CLERKENWELL 3060



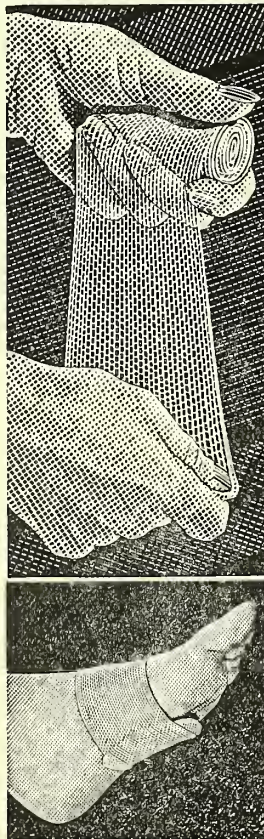
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Do not  
disappoint  
your customers  
—stock and display

**Askit**

Powders and tablets for the safe and  
speedy relief of headaches, colds, chills,  
rheumatic and nerve pains.

EX ALL LEADING WHOLESALE HOUSES



When they ask  
for 'elastic net'  
they mean  
**LASTONET**

**ELASTIC NET BANDAGE** Supplied with ordinary National Health prescription. The fine Lastonet elastic net provides firm, constant support without restricting movement.

**METATARSAL PAD** Chamois covered foam rubber pad with band of Lastonet. Exerts corrective influence to relieve arch strain and tired feet.

**ARCH BINDER** Affords relief in cases of strained arches.

**FINGER STALLS** Require no strap or binding. In five sizes.

**ADJUSTABLE BRACE ATTACHMENT** Elastic. For male wearers of surgical stockings.

Liberal discount to all stockists

**Lastonet**

PRODUCTS LIMITED  
CARN BREA, REDRUTH, CORNWALL  
P6

**NEW PACK. . .****BIG APPEAL**

Watch  
your  
Sales  
GROW !

**Here's news !** The old familiar family remedy in a bright, colourful new pack. Just the thing for effective window and counter display to increase your sales. NEWS too, about the BIG winter season's sales drive. A very extensive national and local advertising campaign has commenced which will put GALLOWAY'S right in the forefront this winter.

PRICES: 1/3, 2/- and 3/6.

## GALLOWAY'S COUGH SYRUP

Prepared by :

P. H. GALLOWAY LTD.  
LONDON S.E.17

**ROTER TABLETS ARE PRESCRIBED  
THE WORLD OVER**



**ROTER** *for the treatment of*

## PEPTIC ULCER and GASTRITIS

In cases of chronic gastric and duodenal ulcer, it often happens that a course of Roter tablets obviates the need for surgical measures or hospitalisation. Roter therapy can also be successfully applied to gastritis and minor stomach disorders.

Roter tablets are constantly advertised to the medical profession, and prescribing is rapidly increasing. Supplies are obtainable from your usual wholesaler.

**F.A.I.R. LABORATORIES LIMITED**  
179 Heath Road, Twickenham, Middlesex

Telephone: POPesgrave 2020

ROTER contains  
NO NARCOTICS  
and has  
NO SIDE-EFFECTS

GASTRIC ULCER TABLETS

### PACKINGS

Retail prices including P.T.  
Trial size, 40 tablets, 7/2d.  
Standard size, 120 tablets,  
20/7d. Full treatment size,  
640 tablets, 103/-d. Dis-  
pensing Packs, 720 tablets,  
P.T. exempt.

**EFFECTIVE**  
**DELICATE**  
**LASTING**

# Velpuff

**THE NEW  
CREAM POWDER  
COMPACT**



Velpuff is a perfect creamy base, with the softest, finest powder. Simple and quick to use, it is ready to be smoothed on with its own puff. Amazingly effective, this wonderful velvet texture make-up will stay matt for hours. The pack is 2½" in diameter, and mounted on an attractive card for easy display.

**STOCK UP!**

**SALES UP!**

**DIXOR LTD.**

ST. LEONARD'S RD., MORTLAKE,  
LONDON, S.W. 14

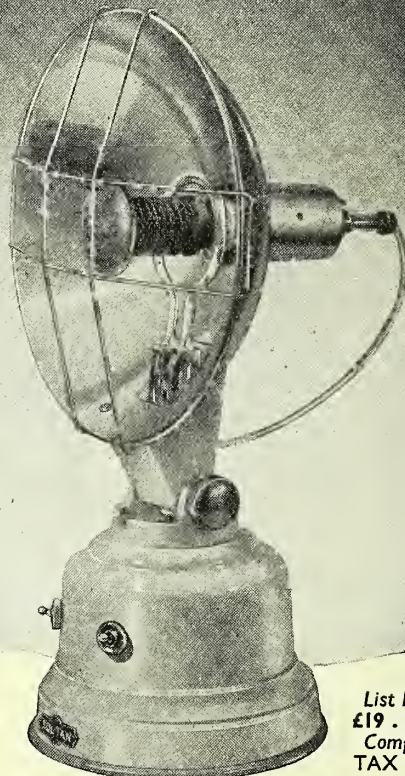
RETAIL  
**3/6** EACH  
WHOLESALE  
**18/8** PER DOZ.  
●  
3 SHADES  
**FASCINATION**  
(Natural)  
**ENCHANTMENT**  
(Rachel)  
**MYSTIC TOUCH**  
(Peach)

**'SOL-TAN'**

## 'TRIPLERAY'

ULTRA VIOLET • RADIANT HEAT • INFRA RED

**POPULAR for HOME  
and PROFESSIONAL USE**



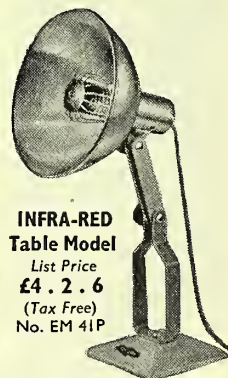
'Sol-Tan'  
"TRIPLERAY"  
Model  
100/23 TM.

List Price  
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Complete  
TAX FREE

*Supplied only under Doctor's prescription or for professional use.*

### A 'SOL-TAN' for EVERY PURSE and PURPOSE

For 25 years 'SOL-TAN' health lamps have been popular for home, professional and hospital use. Their wide range covers all type of Ultra Violet, Infra-Red, Radiant Heat and combinations of 2 or 3 types in one reflector. Continual improvement has kept 'Sol-Tan' in line with the latest developments in Electro Medical Research. Well constructed and finished they are guaranteed for 12 months.



**INFRA-RED  
Table Model**  
List Price  
**£4. 2. 6**  
(Tax Free)  
No. EM 41P



Write for details of the quick selling 'SOL-TAN' range to:  
**THE LONDON COMMERCIAL ELECTRICAL STORES LTD.**  
20-23 CURSITOR STREET, LONDON E.C.4



*—the  
recognised house  
for **ETHICALS**  
in the North-East*

One of the most comprehensive selections of medical preparations outside of London is to be found in the M+P Ethical Showrooms, where all leading manufacturers are represented. Specially trained assistants in attendance to advise. Efficient postal department available to deal with country enquiries. All very good reasons, you will agree, why you should send your next order to M+P for prompt service and absolute dependability.

*For Ethicals, Sunaries, Dressings, and all Medical Supplies:*

**MAWSON & PROCTOR PHARMACEUTICALS LTD.**  
**LOW FRIAR LANE, NEWCASTLE-ON-TYNE 1**

Telephone : 27074 (5 lines)

**IMPROVED FORMULA****'LIVOX' CAPSULES**

*For the treatment of Anaemias, Nutritional Deficiencies, General Debility*

**NOW  
FERROUS  
GLUCONATE**

**FORMULA :**

LIVER EXTRACT CONCENTRATE	....	....	2.5 grains
<del>IRON GLYCEROPHOSPHATE</del>	....	....	1.0 "
COPPER SULPHATE	....	....	0.01 "
MANGANESE SULPHATE	....	....	0.01 "
VITAMIN B <sub>1</sub>	....	....	0.165 mg.
VITAMIN B <sub>2</sub>	....	....	0.05 "
NICOTINAMIDE	....	....	<del>0.5</del> "

**NOW  
5.0 mg.**

OXO LTD (Medical Dept) THAMES HOUSE, LONDON, EC4 TELEPHONE: CENTRAL 9781

**Keen Buyers watch for this House Mark!**



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PHARMACEUTICAL CHEMICALS, GALENICALS,  
VETERINARY PREPARATIONS, COMPRESSED  
TABLETS, PILLS, CAPSULES, PACKED GOODS,  
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*All of the Highest Quality*

STOCKISTS OF PHOTOGRAPHIC APPARATUS,  
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*Direct Importers* OF VEGETABLE  
DRUGS

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**Brook Parker & Co Ltd MANUFACTURING CHEMISTS**

**ASHFIELD, BRADFORD, Yorks.** Telegrams Broparco, Bradford. Telephone 28237/819

AND  
**13 QUEEN STREET, GLASGOW, C.1**

Telephone CENTRAL 1918

BPB/A40



## But does your hair *stay* lovely?

Perhaps, like this girl, you've had a date with the hairdresser . . . your hair looked wonderful when you left . . . you thought your money well spent—or you may have lavished care and time on a special 'hair-do' at home—then *what a pity not to take care of your hair afterwards!*

Trouble starts during the night—even if you don't stir an inch while you sleep your new coiffure will be very much flattened by morning—and if, like many of us, you're inclined to toss and turn in your slumbers, well—look in the mirror next morning . . . heart-breaking, isn't it?

"But what can I do?" you ask. That's easily answered! RAYWARP make the prettiest slumber nets and caps. They keep every hair in place—and you stay glamorous, too! And during the day? RAYWARP hairnets, made from the finest superstrong nylon, are your invisible ally. Out of doors—shopping, gardening, cycling—RAYWARP's Fiesta nylon turban, pretty and easy to wash, guarantees a well-groomed look, *always*.

RAYWARP keeps beauty a-head

**Raywarp**  
HAIRNETS

RAYWARP TEXTILES LIMITED, NOTTINGHAM



These nets are selected from a wide range to meet every need. Illustrated price-list on request.

## Do You Agree?

We think the arguments used in our magazine advertising are sound and that many of the nine million readers of "Woman's Own" and "Woman's Weekly" are persuaded by them to buy Raywarp hairnets, slumbernets, and turbans.

Raywarp advertising, in fact, *does* sell our products; and other Raywarp lines are featured regularly in these women's interest periodicals.

If you have not received a copy of our current price list, post a card to the address below. If you already know Raywarp and believe in the power of advertising, stock up now — because nothing is worse for business than having to say: "Sorry, we're out of stock".

Raywarp keeps beauty ahead.



RAYWARP TEXTILES LTD., ALFRED STREET NORTH  
NOTTINGHAM

# TABLETS

## PILLS LOZENGES

## PESSARIES SUPPOSITORIES

All B.P., B.P.C., N.F., and many other products from stock.

Customers' own materials processed.

Tablets, etc., produced to customers' formula and specifications.

*Wholesalers and Manufacturers are invited to  
submit enquiries for Home and Export markets.*



**MATTHEWS & WILSON LTD.**

6-8, COLE STREET, LONDON, S.E.1.

Tel.: HOP 2147-8

*How do they ask for a vacuum flask?*



**THERMOS**  
REGISTERED TRADE MARK

*every time!*

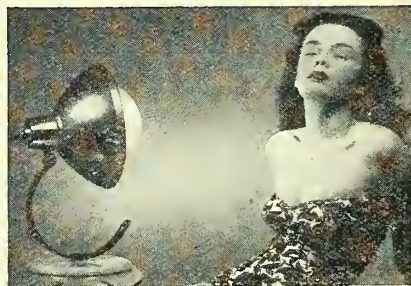
Yes, customers young and old ask for Thermos when they want a vacuum flask (or a jug or a jar) . . . because Thermos is the original vacuum flask, the most efficient, and—in the long run—the cheapest. All Thermos flask models now have the new easy-pouring lip.

There's always a sale for

**THERMOS**

## THE CARDINAL

### ULTRA-VITALUX APPARATUS



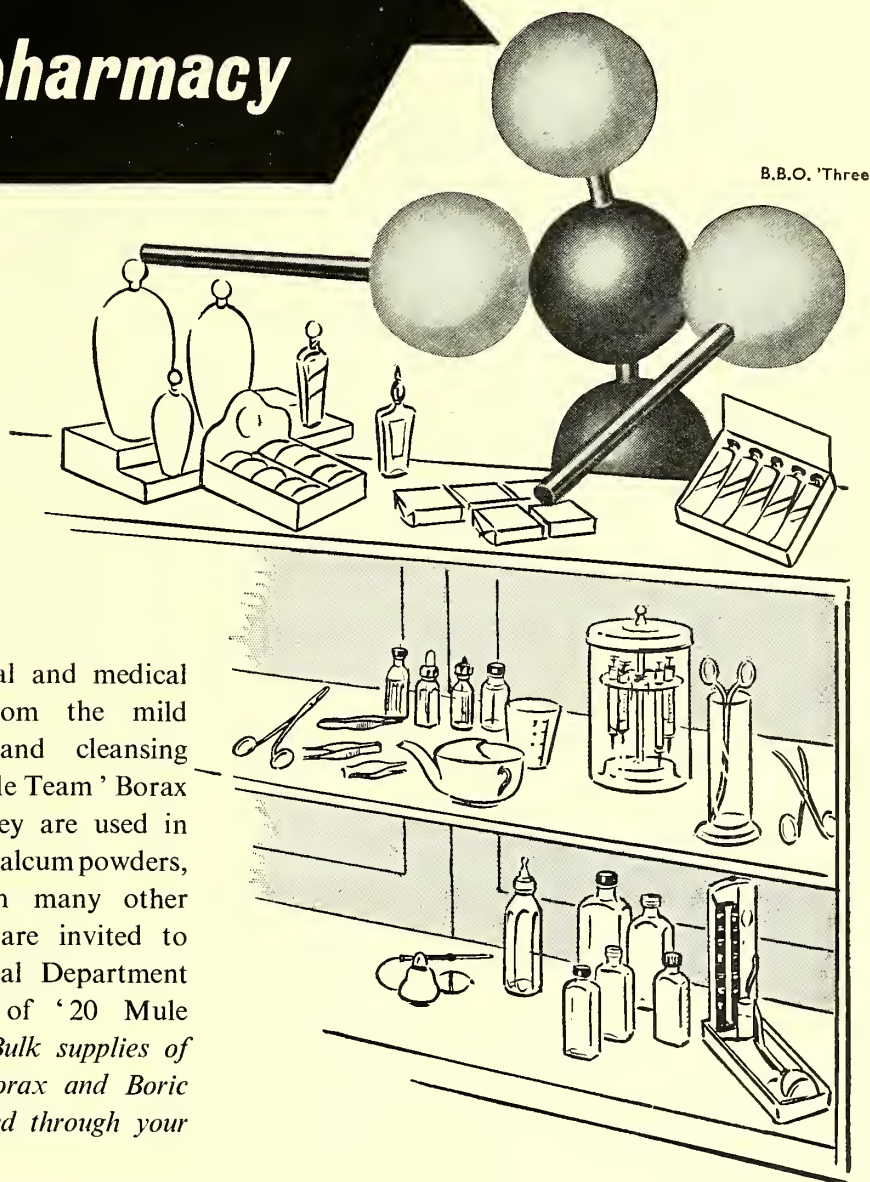
*Coronation Model No. 2*

Your profits are big and sales are so easy on the most attractive and practical of all sun lamps.  
Table Model No. 2 £10 12s. 0d.  
Floor Model No. 22 £13 0s. 6d.  
Less 25% Retail discount, post free  
(For sale against Medical Certificate)

**ULTRA-VIOLET LIMITED**

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*I serve in  
the pharmacy*



Many pharmaceutical and medical formulæ benefit from the mild antiseptic, buffer and cleansing properties of '20 Mule Team' Borax and Boric Acid. They are used in medicated dressings, talcum powders, eye lotions, and in many other applications. You are invited to consult our Technical Department on the properties of '20 Mule Team' products. *Bulk supplies of '20 Mule Team' Borax and Boric Acid may be obtained through your usual wholesaler.*

# 20 MULE TEAM BORAX AND BORIC ACID

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*The*  
**BEATSON**  
*Ribbed Oval..*

The new Beatson Ribbed Oval carries on the tradition of the increasingly popular Beatson Medical.

Available in a wide range of sizes, both Cork Mouth and Screw Neck, with either White Enamelled or Black Plastic Caps.

*"The Sign of a*



*Good Bottle"*

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ESTABLISHED 1751

Glass Bottle Manufacturers  
ROTHERHAM YORKS

B.C.73

## CENTENARY 1845-1945



### "Eagle" Brand Chemicals

PHOTOGRAPHIC CHEMICALS  
HYPOSULPHITE SODA  
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(Crystals and Anhydrous)  
EPSOM SALTS B.P.  
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PRECIPITATED SULPHUR B.P.  
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Enquiries Invited

**JOHN RILEY & SONS, LTD**  
HAPTON, NR BURNLEY

Grams: "Rileys" Hapton

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For "MASTER" BRAND SURGICAL TRUSSES  
SUSPENSORY BANDAGES  
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PERFUMERY BOTTLE WICKERERS in RAFFIA  
or SILK, plain or fancy, wide range of designs.  
Own bottles wickered at moderate cost.

**Black Bull Works, Market Road**  
**London, N.7**

May we quote you for—

**GLAUBER SALTS B.P.**  
PEA AND FEATHERY CRYSTALS

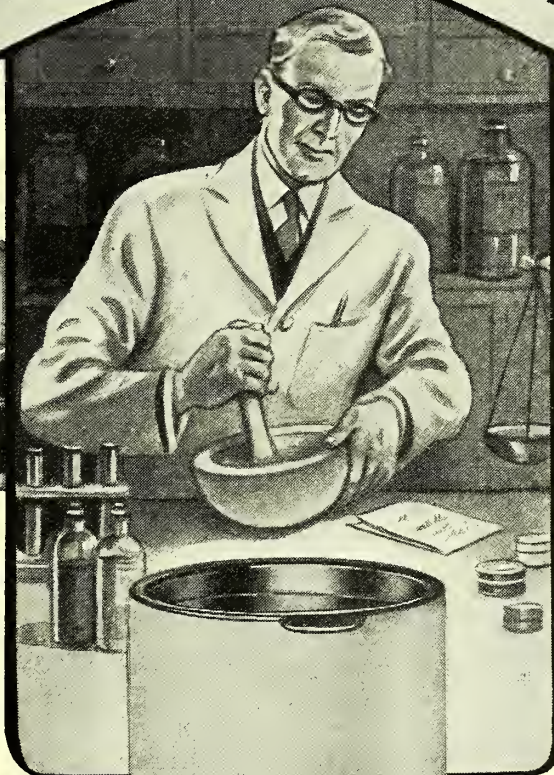
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ALL B.P. GRADES CONFORM TO 1953 STANDARD.  
ALSO COMMERCIAL, BATH, & VETERINARY QUALITIES.

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HEYWOOD, LANCs.

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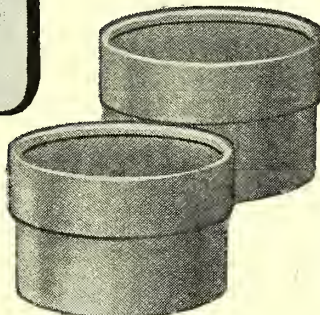
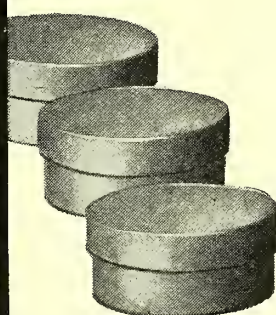
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"LITTLE JOHN" DRUMS

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In every sphere of ethical practice Calmic preparations are confidently prescribed. Constant research and rigid standards of production control are bringing about new methods of treatment and pharmaceutical preparations of proved clinical excellence.

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Containing Ferrous Succinate, the new oral organic iron for the treatment of iron deficiency anaemias, specially recommended for the anaemias of pregnancy. In liquid or tablet form. *Dosage:* 1 teaspoonful/tablet t.d.s. or as prescribed. *Packs:* 4-oz., 20-oz., 40-oz., 80-oz. bottles. 100 tablets, 1,000 tablets.

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### HYPON

Analgesic and antipyretic Tablets—containing Codeine, Phenacetin and Acetylsalicylic Acid with addition of Caffeine and Phenolphthalein to overcome side effects of depression and constipation. *Packs:* 10, 50, 125, 250. Tax-free dispensing packs 600, 1,000.

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A haematinic compound utilising the advantages of Ferrous Gluconate for the treatment of microcytic hypochromic anaemias, iron deficiency anaemias and the anaemias of pregnancy. Available in liquid or tablet form. *Packs:* Bottles of 4, 20, 40, 80 fluid oz.; 100 tablets; 1,000 tablets.

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For napkin rash. A water miscible cream for the treatment and prevention of urinary dermatitis in infants and incontinent patients. *Packs:* 2-oz. tubes and 1-lb. dispensing jars.

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Containing Aluminium Glycinate for the medical management of gastro-duodenal ulceration. *Packs:* Bottles 100 tablets and 1,000 tablets.

### CIMLAC GAUZE

(Compound Aminarine Tulle)  
A general wound dressing which promotes healing. It is bacteriostatic, non-greasy and non-adherent. A useful dressing for the treatment of burns, wounds, boils, varicose ulcers and for skin grafting. *Packs:* Prescription (10 pieces) and Hospital (24 pieces) 3½" x 3½".

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Anti-pruritic fungicide for the treatment of athlete's foot and other common fungoid infections. *Packs:* 2-oz. jars of cream and insufflators of powder (approx. 2½-ozs.).

**CALMIC  
LIMITED**

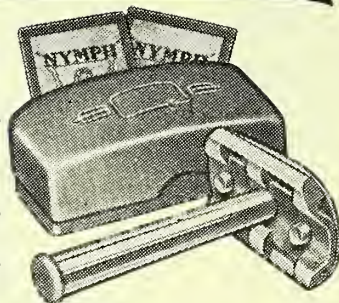
CALMIC LIMITED CREWE. Phone CREWE 3251-5

LONDON: 2 Mansfield St., W.1. Phone LANGham 8038-9

# It sells on sight!

Don't miss  
this ready  
profit-maker

If displayed  
on your counter  
quick sales  
are certain



## Nymph

*ladies'  
safety razor*

Backed by national  
full-colour advertising



Every woman is a possible buyer of this dainty toilet accessory. Reasonably priced at 3/6 to ensure spontaneous purchase!

Complete in moulded case with 2 blades, in PINK, BLUE, GREEN, "Nymph" Blades in cartons of 6 blades, 1/5.

Obtainable from your usual wholesaler.

A PRECISION-MADE **SOUPLEX** PRODUCT

SOUPLEX LTD., MORECAMBE, LANCs.

## Teach Baby to drink Correctly ...

—head back without risk  
of choking, spluttering or  
mess with the

**NEW**  
translucent,  
unbreakable

# Teacher Beaker



This new flexible and hygienic Beaker is specially designed to pour at just the right speed and correct angle for drinking. The covered-over top retains heat and keeps out dirt, and the special protective ring makes it easy to hold and practically spill-proof. It is designed with a push-on top, which makes the Beaker easy to fill and clean. Made in blue, pink and natural and sold in attractive gift boxes.

Wholesale 36/- per doz. Retail Price 4/6d. each.

The original opaque Teacher Beaker still available.

Wholesale 31/4d. per doz. Retail Price 3/11d. each.

Advertised in National Publications

Manufactured by: J. L. CAPLIN, LTD.,

178-180, Homerton High St., London, E.9. Telephone: AMHerst 1396



*Supplied the  
Chemist*

*with*

PRINTED LABELS FOR  
DISPENSING & PACKED LINES.  
CARTONS, PLAIN or PRINTED,  
FOR TABLETS & POWDERS.  
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D.D.A. & POISON REGISTERS.  
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*etc.*

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ANDOVER  SILVERLOCK  
HANTS.

Pack it in a

Far Rigid Containers  
in Aluminium,  
Collapsible Tubes in  
Tin coated lead,  
Aluminium and other  
Alloys, and Capsules  
in Tin/Lead,  
Aluminium and  
Pleated Aluminium.



**BETTS** collapsible tube

Look at what the BETTS service offers:  
technical advice on your packing problems;  
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facilities and part delivery as necessary.  
Special storage for delicate or hygienic tubes,  
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All types of collapsible tubes and containers  
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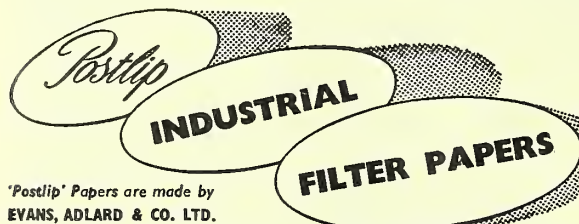
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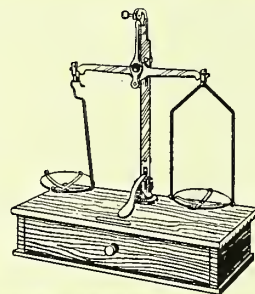
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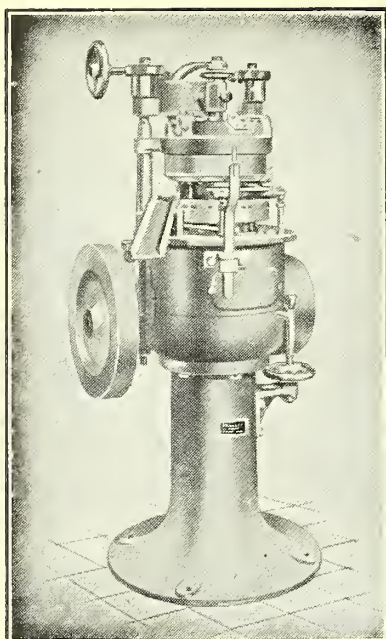
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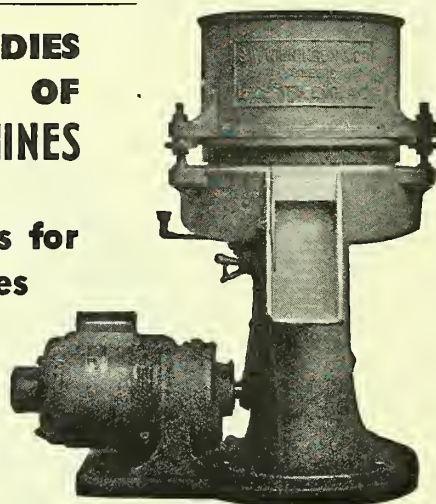


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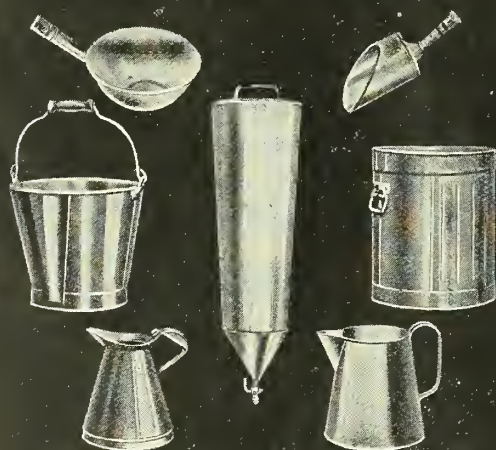
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(TRADE MARK)

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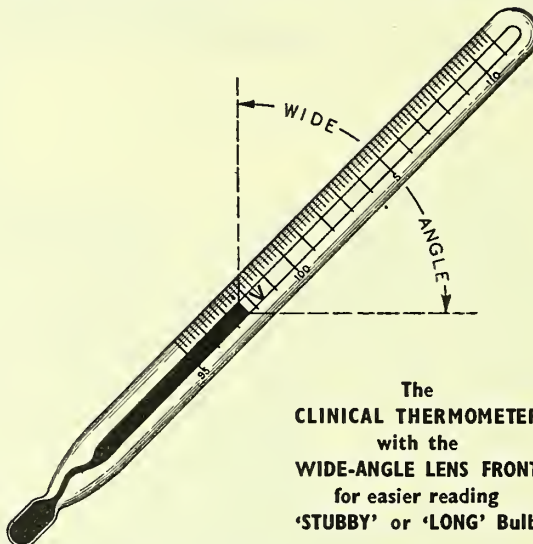


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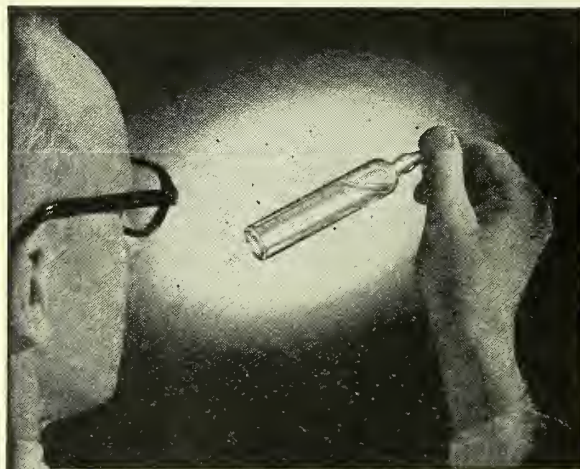
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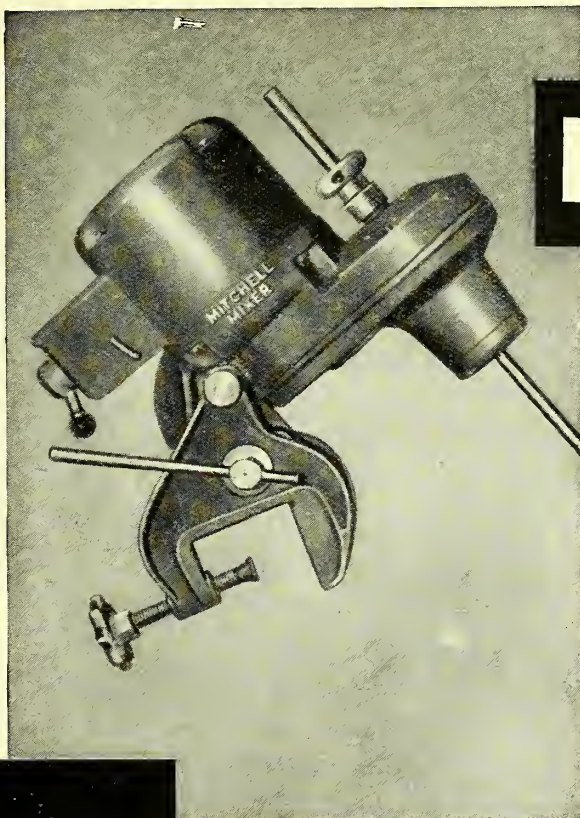


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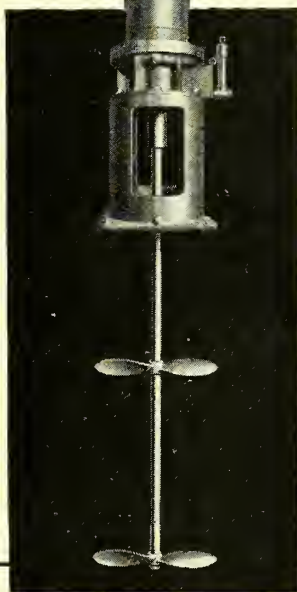
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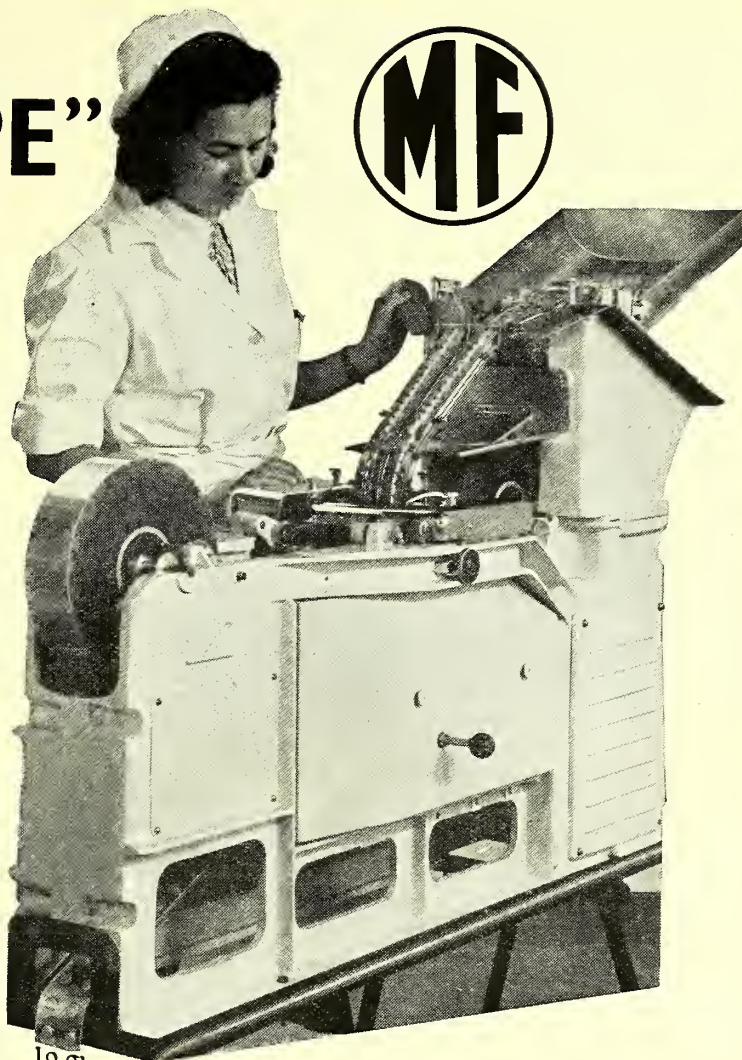
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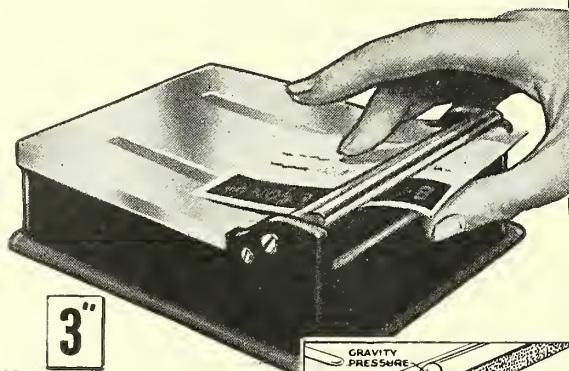
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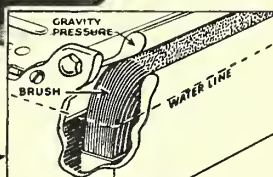
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**3"**

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For instruction slips, Poster Stamps, etc.



*-with just  
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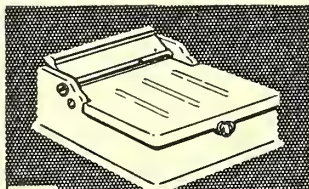
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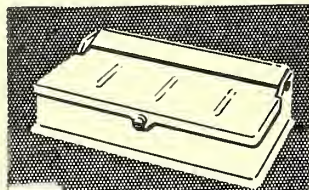
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This is a general purposes model with a 5" brush suitable for the average parcel label. It will moisten labels up to 5" width.



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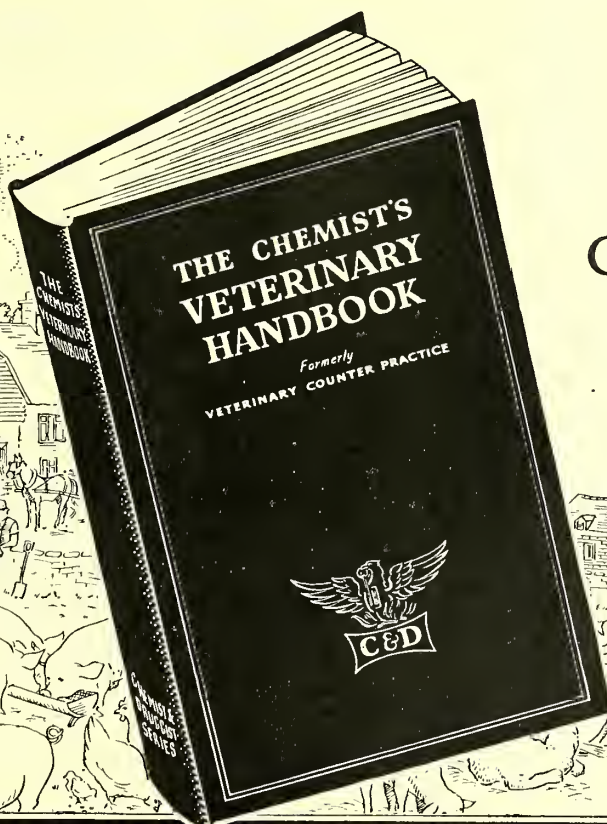
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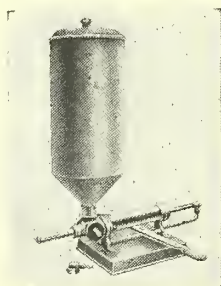
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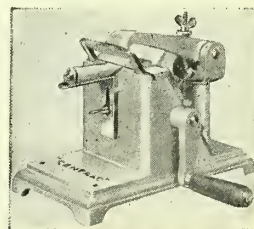
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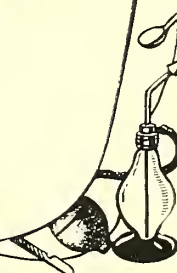
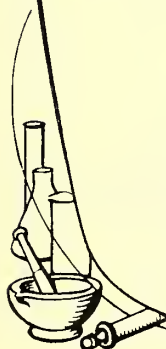
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JEYES' FLUID	TRADE PRICE	RETAIL PRICE
5 oz BOTTLE	11/3 DOZ	1/3 EACH
10 oz BOTTLE	16/6 DOZ	1/10 EACH
QUART CAN	45/- DOZ	5/- EACH
GALLON CAN	11/3 EACH	15/- EACH
<b>JEYPINE</b>		
6 oz BOTTLE	9/9 DOZ	1/1 EACH
12 oz BOTTLE	18/- DOZ	2/- EACH
20 oz BOTTLE	27/- DOZ	3/- EACH

The price of quart and gallon cans of Jeypine remain unchanged.

Existing trade terms unaltered.

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72/SYK



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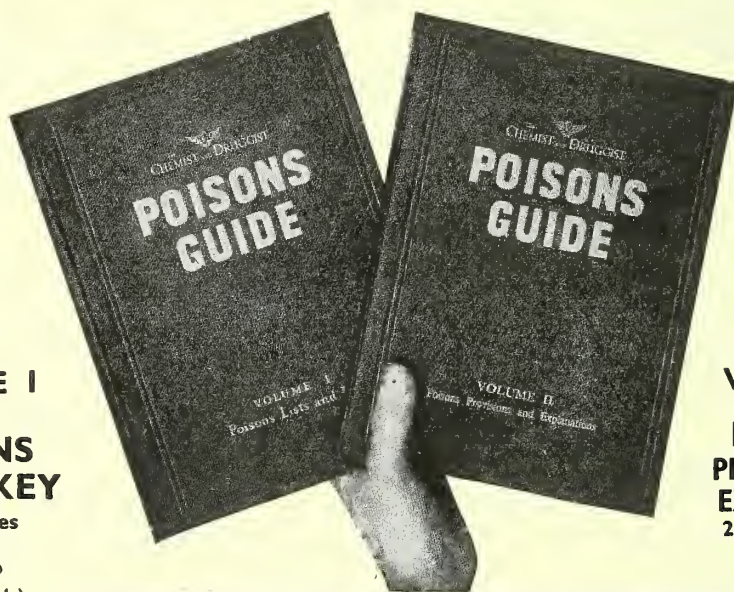


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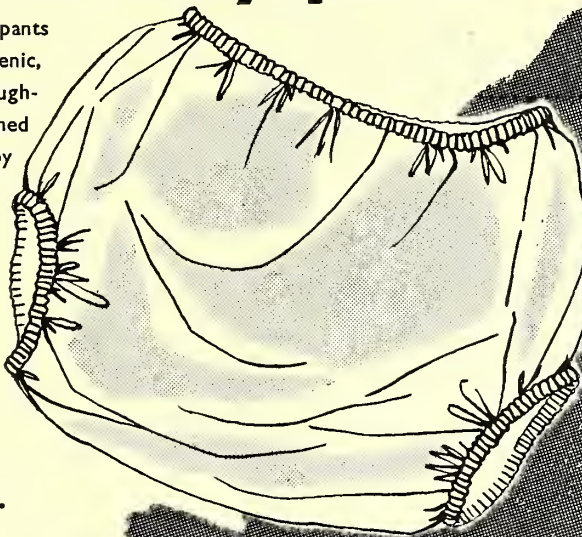
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Applications are invited for the post of post-graduate student (male or female) in the Pharmacy Department at this hospital. Candidates must comply with the requirements of the Pharmaceutical Society. Remuneration is at the rate of £350 p.a. plus London Weighting according to age. Applications stating age, particulars of education, etc., with copies of recent testimonials, to be sent to the Hospital Secretary, as soon as possible. C 8954

### CROYDON GENERAL HOSPITAL (Category IV) Pharmacist

required for duties mainly in sterile products laboratory. Salary scale £500—£725 per annum plus London Weighting. Pleasant and modern pharmaceutical department. Application form obtainable from Group Secretary, Croydon Hospital Management Committee, General Hospital, Croydon. C 9032

### KENT AND CANTERBURY HOSPITAL, CANTERBURY Senior Pharmacist

required for the Group Pharmaceutical Department. This post offers excellent experience in all branches of pharmacy. The department serves the Canterbury Group, comprising eleven hospitals with a total of approximately 1,000 beds. Salary (Category IV hospitals) £575 x £30 (5)—£725 x £25 (2)—£775 per annum. Higher qualifications allowance payable as appropriate. Applications with full details and copies of three recent testimonials to be forwarded within ten days of the appearance of this advertisement to the Group Secretary, Canterbury Group Hospital Management Committee, Central Office, Nunery Fields Hospital, Canterbury, Kent. C 9075

### BROOKWOOD HOSPITAL, KNAPHILL, WOKING, SURREY

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Applications are invited for the post of Assistant in Dispensing. The successful candidate will be required to work under the supervision of the Chief Pharmacist, who is responsible for the preparation and issue of drugs and dressings for about 1,750 patients.

The salary scale (£140 per annum at age 16, rising to a maximum of £435 per annum, with an addition of £15 per annum for an approved qualification) and conditions of service are in accordance with the recommendations of the Professional and Technical Council B of the Whitley Council.

The appointment is subject to the provisions of the National Health Service Superannuation Regulations, and the successful candidate will be required to pass a medical examination. Accommodation is available for single candidate, for which a charge of 42s. per week will be made.

Applications, giving particulars relating to age, experience and qualifications, together with copies of two recent testimonials to be sent to the Physician-Superintendent as soon as possible. C 225

### CENTRAL ELECTRICITY AUTHORITY, EAST MIDLANDS DIVISION

#### STATION CHEMIST CASTLE DONINGTON POWER STATION

Vacancy No. 143/55/C&D

Candidates should preferably be Associates of the Royal Institute of Chemistry or hold an equivalent qualification and have had previous experience in a position of responsibility in a Power Station laboratory.

Candidates should be familiar with the analysis of coal, oil and water and with the interpretation and application of the analytical results. Experience with problems arising from operation at high pressures and temperatures and with the solution of such problems is desirable.

Salary will be in accordance with Class L, Grade 7 (£1,035-£1,125 per annum) of the National Joint Board Agreement.

Closing date for receipt of applications:—September 13, 1955.

This appointment will be pensionable within the terms and provisions of the Central Electricity Authority and Area Boards Superannuation Scheme.

Applications should be submitted on the official form AE6/ACT which may be obtained from the Divisional Establishments Officer, Central Electricity Authority, P.O. Box 25, Barker Gate, Nottingham, and should be returned to the undersigned by the date stated. Please quote Vacancy Number.

L. F. JEFFREY,

Divisional Controller

August 19, 1955.

C 9048

### SOUTH-WEST MIDDLESEX HOSPITAL MANAGEMENT COMMITTEE, WEST MIDDLESEX HOSPITAL, ISLEWORTH

Locum Tenens Pharmacist

required immediately for an indefinite period. Salary 16 guineas per week. Applications to Chief Pharmacist. C 9009

### ST. MARK'S HOSPITAL, CITY ROAD, LONDON, E.C.1

Locum Pharmacist

required for several weeks commencing immediately. Salary £15 15s. per week. Applications to Secretary. C 9080

### CRUMPSALL HOSPITAL, MANCHESTER, 8

Locum Pharmacist

A vacancy exists for a locum pharmacist. Please apply by letter to the Hospital Administrator as soon as possible. C 9076

### CRUMPSALL HOSPITAL, MANCHESTER, 8

Assistant Pharmacist

A vacancy exists for an assistant pharmacist. Please apply by letter to the Hospital Administrator as soon as possible. C 9077

### MOORFIELDS WESTMINSTER & CENTRAL EYE HOSPITAL (Category V) Senior Pharmacist

Applications are invited for the post of Senior Pharmacist at this Hospital. Salary in accordance with Whitley Council Scale (£575-£775), plus London Weighting and £25 p.a. for recognised higher qualification.

Applications, with names of two referees should be addressed to the Chief Pharmacist, Moorfields Westminster & Central Eye Hospital, City Road, London, E.C.1. C 9027

### MOORFIELDS WESTMINSTER & CENTRAL EYE HOSPITAL (Category V) Pharmacist

Applications are invited for the position of Pharmacist at this Hospital. Salary in accordance with Whitley Council Scale (£500-£725), plus London Weighting and £25 for recognised higher qualification. Applications with names of two referees should be addressed to the Chief Pharmacist, Moorfields Westminster & Central Eye Hospital, City Road, London, E.C.1. C 9028

### MOORFIELDS WESTMINSTER & CENTRAL EYE HOSPITAL (Category V) Assistant in Dispensing

Applications are invited for the position of Assistant in Dispensing at this Hospital. Salary in accordance with Whitley Council Scale, together with London Weighting. Applications should be addressed to the Chief Pharmacist, Moorfields Westminster & Central Eye Hospital, City Road, London, E.C.1, together with the names of two referees. C 9029

### SHEFFIELD No. 2 HOSPITAL MANAGEMENT COMMITTEE

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Applications are invited from suitably qualified persons for the post of Assistant in Dispensing for duty in the Central Pharmaceutical Department at Middlewood and Wharfedale Hospitals (2,400 patients including medical and surgical units, etc.).

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Conditions of service in accordance with those issued by the appropriate Whitley Council. National Health Service Superannuation Regulations apply.

Applications, stating age and experience, together with the names and addresses of two persons to whom reference may be made should be forwarded to Group Pharmacist, Middlewood Hospital, Sheffield, 6. C 9063

### WANSTEAD HOSPITAL, HERMON HILL, E.11

Locum Pharmacist

required for any three consecutive weeks up to September 30; 16 gns. per week. Applications with copy testimonials to Secretary, Forest Group H.M.C., Langthorne Road, E.11. C 9016

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THE MAUDSLEY HOSPITAL,  
DENMARK HILL, S.E.5****Senior Pharmacist**

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**THE LONDON HOSPITAL,  
WHITECHAPEL, E.1****Pharmacist**

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**WEST HAM GROUP HOSPITAL  
MANAGEMENT COMMITTEE,  
STRATFORD, LONDON, E.15****Deputy Chief Pharmacist**

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Applications with copies of recent testimonials to the Group Secretary, West Ham Group Hospital Management Committee, Stratford, E.15, by September 17, 1955. C 9060

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The engagement of persons answering these advertisements must be made through a Local Office of the Ministry of Labour or a Scheduled Employment Agency if the applicant is a man aged 18-64 inclusive or a woman aged 18-59 inclusive unless he or she, or the employment, is excepted from the provisions of the Notification of Vacancies Order, 1952.

**RETAIL (HOME)**

**BOOTS THE CHEMISTS** have vacancies in a number of districts for pharmacists, male and female, salary according to age and experience. Engagements on a permanent basis, good prospects, eligibility for pension, life assurance, etc. Applications should be made to Retail Staff Department, Station Street, Nottingham, stating age, experience and district preferred. C 9065

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**COUNTER ASSISTANT,** lady required, experienced in drugs and cosmetics, for ultra-modern substantial pharmacy; all cosmetic agencies held. Good reward for ability; congenial conditions; permanency. Apply Kendale Dispensing Chemists, 51 Exmouth Market, E.C.1. Phone Terminus 9494. C 9070

**ESSEX SUBURB.** A vacancy exists for an experienced pharmacist as manager on a generous salary and expenses basis. Promotion and progress is assured in a modern shop and dispensary with adequate supporting staff. Applications in first instance, stating details of career and when available for interview, to Box C 2856.

**EXPERIENCED ASSISTANT** (lady or gentleman) required. Mainly for dispensing in good-class pharmacy with modern dispensary. Supporting staff of four. Good salary. Apply with full particulars, S. H. Newman, Chemist, 19 Victoria Road, Surbiton, Surrey. C 2865

**EXPERIENCED YOUNG LADY ASSISTANT** required, with knowledge of cosmetics and able to do window dressing. Good salary to suitable applicant. State age, experience, etc. Cartwright's, Chemists, 69 Leytonstone Road, E.15. C 2867

**NORTH-WEST LONDON.** Unqualified assistant required, mainly for dispensing. No Sunday or rota duties. Congenial working conditions. Apply Box C 2861.

**DONCASTER CO-OPERATIVE CHEMISTS, LTD.,** require the services of Pharmacists (male or female) as branch managers. Living accommodation with one post. Minimum rate £780 per annum, 44-hour week. Applications and usual particulars to Superintendent Chemist, St. Sepulchre Gate, Doncaster. C 199

**HENDON CENTRAL,** Part-time lady counter assistant (unqualified) required. Afternoons and Wednesday mornings. Please write stating experience (if any), and wage required. Wool-lons, 256 Hendon Way, N.W.4. Hendon 7431. C 2854

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**PHARMACIST** required for the position of branch manager, male or female, applications in writing stating age, experience and wage required, together with copies of recent testimonials to the General Manager, Heckmond-wike & District Co-operative Society, Ltd., 3 Oak Street (P.O. Box No. 16), Heckmond-wike. Endorse envelope "Chemist" in top left-hand corner. C 2853

**PHARMACIST MANAGER** required in ultra-modern shop in N. London area. A well remunerated permanency, congenial conditions for the successful applicant. Apply Kendale Dispensing Chemists, 51 Exmouth Market, E.C.1. Phone Terminus 9494. C 9071

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**SOUTH YORKSHIRE.** A manager will shortly be required for a new pharmacy to be opened in the shopping centre of a large housing estate. Salary £750 plus commission (total around £850). New house, centrally heated, with garden and garage, available. Full details to R. C. Eaton, 71-73 Doncaster Road, Gold-thorpe, near Rotherham. C 2845

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**LOCUM PHARMACISTS** required for London and suburban areas, long or short periods. Permanency at conclusion of tour if desired. Salary and expenses basis. Apply to Chief Pharmacist, London Co-operative Chemists, Ltd., Grange Road, Leyton, E.10. C 2858

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**PHARMACISTS REQUIRED** by English company for service in British West Africa. Progressive salary. Free furnished accommodation. Free medical services. Contributory pension fund with generous pension at age 55. Tours of about eighteen months with leave on full pay. Initial kit allowance. First-class passages by air or steamer provided. Low income-tax rates. Reply giving full particulars to Box C 2871.

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**AN EXPANDING** ethical and pharmaceutical organisation requires the services of a pharmacist or other suitably qualified person for an interesting post in the sales department. Prospects are attractive since the person selected would be responsible for the organisation and development of the company's medical information activities. There is a company pension scheme in operation and a 5-day week. Apply with full particulars to Box C 9082.

**ASSISTANT WORKS CHEMIST.** Exceptional position open to practical man, 30-45, experienced in cosmetics and pharmaceuticals, including tableting. Qualified industrial chemist preferred, but experience above average is even more important. State age, salary desired and detail experience. Governing Director, Cooltan, 67 Effra Road, London, S.W.2. C 9088

**APPLICATIONS ARE INVITED** for a man to accept responsibility for the running of our factory primarily devoted to the production of tablets, pills, etc. He must also undertake quality control of our products and the ingredients used in them. A pharmaceutical qualification and/or some engineering knowledge are desirable. Write in the first instance, stating age, experience and remuneration required, to General Manager, Matthews & Wilson, Ltd., 6/8 Cole Street, London, S.E.1. C 2868

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**CALMIC, LIMITED,** require experienced medical representative for the Glasgow area as a result of promotion and reorganisation. Knowledge of the area and experience in the field of medical propaganda an advantage. Good salary and expenses, plus car allowance. Pension scheme. Write for interview giving full details to General Sales Manager, Calmic, Limited, Crewe Hall, Crewe. C 9034

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**GEIGY PHARMACEUTICAL COMPANY, LTD.,** desire to appoint Medical Representatives to the following territories:

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2. London S.E.

The positions are most congenial and salaries will be attractive. A new car will be provided and all expenses paid, and a good superannuation scheme exists. We are looking for men who can work on their own initiative and who desire to make a sound career with the Company. Interviews can be arranged in London. Applications will be treated with utmost confidence and should be addressed to Sales Director, Geigy Pharmaceutical Company, Ltd., Rhodes, Middleton, Manchester. C 9083

**MANESTY MACHINES, LTD.,** Speke, Liverpool, 19, require a pharmacist or chemist, age 25-40, to take charge of their experimental and advisory services. The position, which carries a good salary, is one offering scope for initiative, and the successful applicant will require to be both hard-working and energetic. Superannuation scheme in operation. Applications, stating age, experience and qualifications, to be addressed to the General Manager. C 9062

**MEDICAL REPRESENTATIVES,** Sandoz Products, Ltd., invite applications from young men for the immediate appointment of medical representative in the following areas:—

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**PHARMACIST.** Young, male pharmacist wishing to enter the wholesale side required by Midland manufacturing chemists, starting as assistant warehouse manager. The post will provide all-round training with good prospects. Please write stating age and experience, Box C 2851.

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Benger Laboratories, Limited, are appointing an Overseas Manager to control and develop, globally, sales of ethical medicinal and veterinary preparations. A policy of progressive development of products with the highest ethical standing is being followed with increasing emphasis on overseas markets. The position offers scope and excellent opportunity to the right man with initiative and ability. Candidates should have experience of overseas markets and a wide knowledge of propaganda and promotional methods suited to ethical products. The successful applicant will have headquarters in Cheshire, but will be required to visit the more important overseas territories from time to time. The position is permanent and pensionable. Commencing salary will not be less than £1,500 per annum. Applications in confidence to the Secretary, Benger Laboratories, Limited, Holmes Chapel, Cheshire. C 9055

**PHARMACIST REQUIRED** by manufacturing chemists for control of raw materials and finished products, also research work on new products. Permanent position and good prospects. Five-day week, Canteen. Reply in confidence with full particulars including experience, salary required, etc., to Managing Director, Smith Kendon, Ltd., 132 Borough High Street, London, S.E.1. C 2847

**PROCESS WORKER** accustomed to ointments, emulsions, etc., required. Excellent opportunity with permanency. Apply 47/51 Exmouth Market, E.C.1. Phone Terminus 5216. C 9073

**REPRESENTATIVES/AGENTS** required for developing London and Southern areas with well-known and superbly presented proprietaries and medicated confectionery. Full backing and exceptional commission for the right men with established personal connections. Please send complete information, including age and territory, prior to interview, to Sales Director. Box C 2860.

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**REPRESENTATIVE REQUIRED** to carry extra line to chemist shops in London suburbs. Commission only. Box C 2819.

#### REPRESENTATIVES

**BURROUGHS WELLCOME & CO.** invite applications from pharmacists for appointments as Medical Representatives. Applicants, who should be about 30 years of age, must possess a good educational background and wide pharmaceutical knowledge. Previous experience as a representative, while an advantage, is not essential. The position is progressive and pensionable (contributory scheme). Applications (by letter only) will be treated in confidence. They should give full details of experience, etc., and be addressed to The Manager, Home Sales Division (Medical), Burroughs Wellcome & Co., 183/193 Euston Road, London, N.W.1. C 8983

**REPRESENTATIVE** required by well-known Yorkshire wholesale drug house, for Middlesbrough and Tees-side territory. Salary, commission, expenses. Car provided. Apply Box C 9066.

**ROCHE PRODUCTS, LIMITED**, invite applications for posts of medical representatives for Scotland, South Wales and West London. A pharmaceutical qualification or equivalent academic achievement desirable but not essential. Usual expenses and salary commensurate with experience. Contributory pension scheme in operation. Please send in confidence full details of age, experience, etc., to the Secretary, Roche Products, Limited, 15 Manchester Square, London, W.1. C 9058

**SAVORY & MOORE, LTD.**, require a young pharmacist to supervise production at their Tottenham factory. Applicants should have a knowledge of general pharmaceutical manufacturing and ampoule and tablet production. Five-day week, optional pension scheme. Applications, giving details of age, qualifications, experience and salary required should be addressed to the General Factory Manager, Savory & Moore, Ltd., 26 Lawrence Road, London, N.15. C 2820

**SOUTH-WEST ENGLAND.** Representative required by well-known manufacturing chemists to take over existing connection with retail chemists. Must reside upon territory and be car owner. Pension scheme. Full particulars of experience, past and present earnings, etc., in first letter to Box C 9059.

**SHIPPING CLERK** required, previous experience desirable, typing for documentation essential. Halewood Chemicals, Ltd. Tel.: Ambassador 4198. C 9026

**SMITH & HILL, LTD.**, require a manager for their proprietaries and sundries departments. Applicants must be fully conversant with the proprietary pharmaceutical field, particularly ethicals, be a good organiser able to control staff, and assume full responsibility including buying for a very busy department. Please forward in confidence full details of career to date, including present salary, to the Managing Director, Smith & Hill, Ltd., Matilda St., Sheffield, 1. C 2870

**WELL-KNOWN COSMETIC FIRM** requires active representatives for their London territories on salary, commission and expenses basis. Apply Box C 2863.

**WOMAN PHARMACIST** required for a permanent post in the dispensary. Five-day week. Pension and profit-sharing schemes. Apply in writing stating age, experience and salary required to the Staff Manager, The British Drug Houses, Ltd., Graham St., City Rd., N.1. C 9049

**WORKS MANAGER/ANALYST** required by a small South London firm of manufacturing chemists, mainly concerned with making tablets. Some experience in such production and staff control is desirable; also ability to undertake necessary analytical control. Details of experience and salary to Box C 2869.

### WHOLESALE (OVERSEAS)

**APPLICATIONS ARE INVITED** for the appointment of Sales Manager with Burroughs Wellcome & Co. (India), Ltd., Bombay. A pharmaceutical qualification and experience in the distribution of pharmaceutical products and control of medical representatives in India would be an advantage. Age preferably between 30 and 40. The salary is progressive with good leave and pension facilities. Please give full details in writing to Secretary, The Wellcome Foundation, Ltd., The Wellcome Building, Euston Road, London, N.W.1. C 9064

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**AGENTS WANTED**

17/6 for 36 words (min.) then 4d. per word.  
Box 2/-

**AGENTS REQUIRED** for Yorkshire and London. Type of product that does not clash with lines carried by most agents. Reply with full details to Box C 2852.

**M.A.A.**—The badge of a good manufacturers' agent. Manufacturers requiring reputable agents are invited to communicate with the Secretary. The Manufacturers' Agents' Association of Great Britain & Ireland (Inc.), Bream's Buildings, E.C.4. Membership available to established agents only. Particulars supplied. C 4

**CLERICAL**

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**CONFIDENTIAL CLERK** required as personal confidant for the managing director of a progressive group of pharmaceutical establishments in the London area. The applicant should possess knowledge of general retail trade and office routine. Applications in confidence to Managing Director, Box C 2859.

**SITUATIONS WANTED**

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**YOUNG MAN FROM CEYLON**, age 25, passed G.C.E. (Advanced Level), three years' experience as manager of a large chemist's shop, two years' experience as medical representative, trained in India, wishes to come to England. Willing to work in any capacity in chemist trade. Pay immaterial. Hard and honest worker. Excellent testimonials and well recommended. Possesses drive and initiative. Will any kind firm please help? Write Vince Abeyagoonwardena, 175½ Prince of Wales Avenue, Colombo 14, Ceylon. C 2848

**YOUNG SPANIARD**, aged 23, son of leading wholesale perfumer in Barcelona, wishes spend six months England on student/employee or family exchange basis, object improve knowledge English language. Box C 9052.

**RETAIL (HOME)**

**DISPENSER** (Hall) seeks part-, whole-time, or locum post, Box C 2866.

**WHOLESALE**

**SENIOR REPRESENTATIVE** desires executive position as sales manager or assistant with a reputable company. Been with present company over 20 years. Personal connection over the whole of Great Britain and Ireland, and expert on sales, propaganda, etc., on ethical and surgical preparations. Box C 2831.

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**ALL KINDS OF BOTTLES, JARS, SCREW CAPS**, cartons, packaging materials and manufacturers' stocks of all kinds bought at fair price for spot cash. We are buyers of merchandise of EVERY DESCRIPTION. Clearance Stocks, Discontinued lines, Surplus and Redundant Stocks. Should you have anything for disposal, please send us samples and particulars. Reliance Trading Co., 13 New College Parade, Finchley Road, N.W.3, C 153

**MANESTY D3** tablet compressing machines and stainless steel mixers. Box C 9067.

**WE WILL PURCHASE** for cash a complete stock, a redundant line, including finished or partly finished goods, packing raw materials, etc. No quantity too large. Our representative will call anywhere. Write or telephone:—Lawrence Edwards & Co., Ltd., 6/7 Wellington Close, Ledbury Road, London, W.11. Tel.: Bayswater 4020, 7692. C 140

**MEDICAL BOTTLES**, tablet bottles, closures and all types of packaging materials purchased, no quantity too large. Samples and full details to Noel Davold & Co., 9 Laurence Pountney Lane, Cannon Street, E.C.4., Mansion House 3951-2. C 178

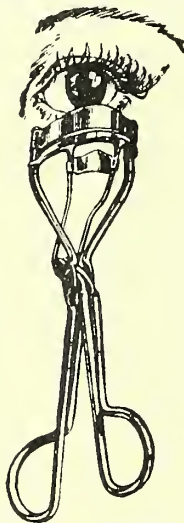
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**THE TRADE MARKS** set out below were assigned on June 22, 1955, by Stanning Proprietaries, Ltd., of Trafalgar House, 11 Waterloo Place, London, S.W.1, to Lloyd Hamol, Ltd., of the same address *without the goodwill of the business* in which they were then in use.

No.	Mark	Goods
716028	THORACIN	Pharmaceutical preparations for human use.
716670	THORAGOL	Analgesic creams being pharmaceutical preparations for external use. C 2841

The Trade Marks set out below were assigned on July 5, 1955, by Societe Belge De L'Azote Et Des Produits Chimiques Du Marly, Societe Anonyme, of 4 Boulevard Piercot, Liege, Belgium, to Societe Des Laboratoires Labaz, of 168 Avenue Louise, Brussels, Belgium, *without the goodwill of the business* in which they were then in use.

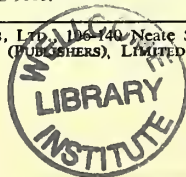
No.	Mark	Goods
720617	BECAPTAN	Pharmaceutical preparations and substances but not including vitamin preparations.
B721571	ADRENOXYL	Semicarbazone of adrenochrome and preparations and compounds thereof all being pharmaceutical products.
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**MISCELLANEOUS**

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